

ENVIRONMENTAL ASSESSMENT OFFICE

NGR Resort Consultants Inc.

MELVIN CREEK/CAYOOSH MOUNTAIN RESORT PROJECT

REPORT AND RECOMMENDATIONS

OF

THE MELVIN CREEK/CAYOOSH PROJECT COMMITTEE

WITH RESPECT TO

**THE ISSUANCE OF A PROJECT APPROVAL CERTIFICATE
UNDER THE *ENVIRONMENTAL ASSESSMENT ACT*, RSBC 1996, c.119**

and

**FULFILMENT OF THE REQUIREMENTS OF A SCREENING REPORT
UNDER THE
CANADIAN ENVIRONMENTAL ASSESSMENT ACT, 1992, c.37**

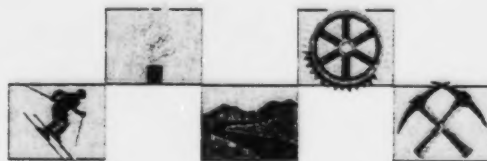
SUBMITTED TO:

**THE EXECUTIVE DIRECTOR
ENVIRONMENTAL ASSESSMENT OFFICE**

PREPARED BY:

THE MELVIN CREEK/CAYOOSH PROJECT COMMITTEE

June 30, 2000



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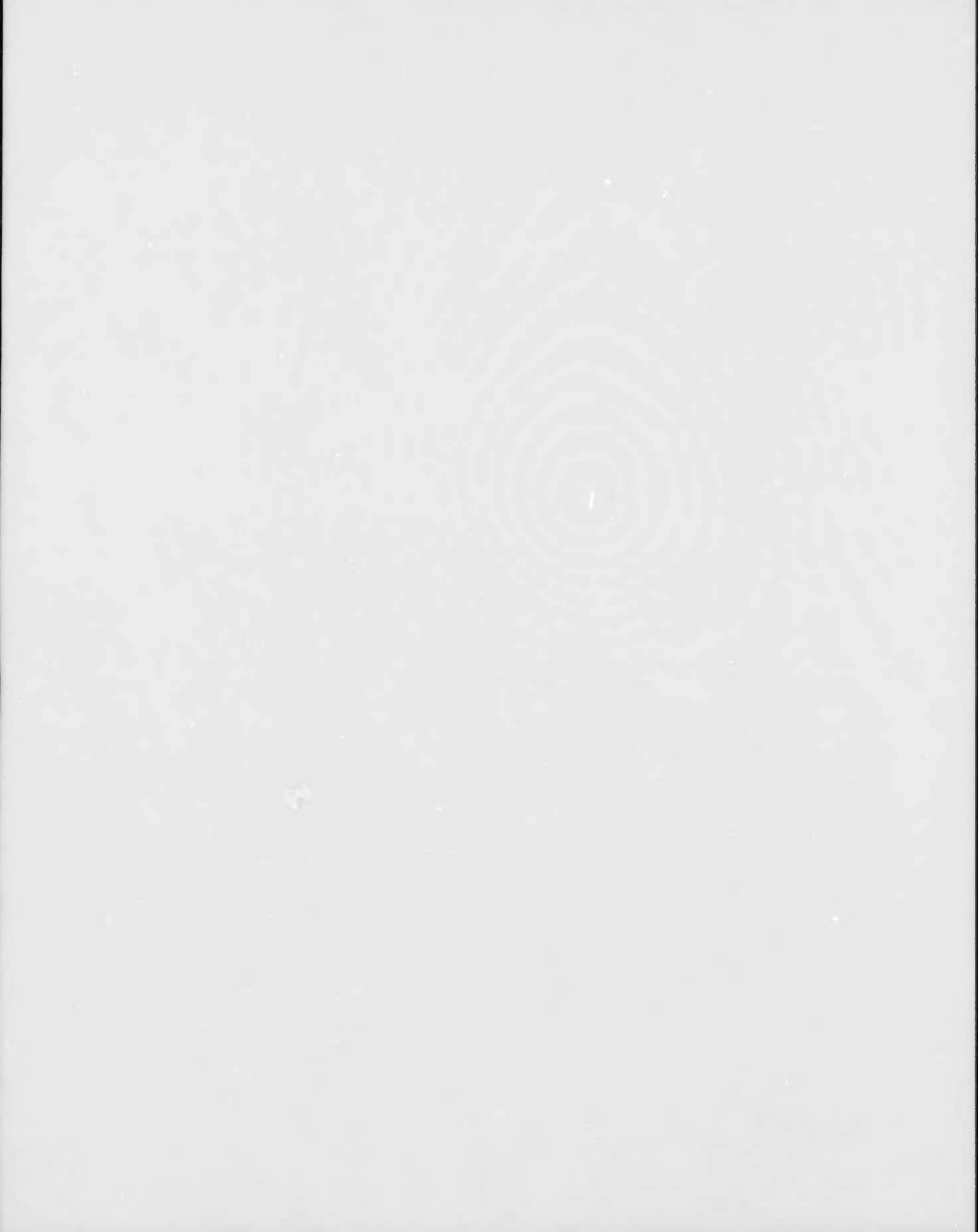


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LIST OF ACRONYMS AND ABBREVIATIONS

LIST OF ACRONYMS AND ABBREVIATIONS

AAC	annual allowable cut
AEIO	Aboriginal Economic Initiatives Office
AHRDA	Aboriginal Human Resource Development Agreement
AHRDS	Aboriginal Human Resource Development Strategy
AIA	Archaeological Impact Assessment
Ainsworth	Ainsworth Lumber Co. Ltd.
Antiquus	Antiquus Archaeological Consultants Ltd.
AOA	Archaeological Overview Assessment
ARD	acid rock drainage
ATV(s)	all-terrain vehicle(s)
BCAL	BC Assets and Land Corporation
BCAS	BC Ambulance Service
BCUC	BC Utilities Commission
BCTFA	BC Transportation Financing Authority
BHA	Brent Harley and Associates Inc.
BMP	Bear Management Plan
BOD	biochemical oxygen demand
BP	Before Present
BUs	bed units
CASP	Commercial Alpine Ski Policy
CCC	comfortable carrying capacity
CCG	Canadian Coast Guard (DFO)
CCME	Canadian Council of Ministers of the Environment
CDC	Conservation Data Centre
CEAA	<i>Canadian Environmental Assessment Act</i>
CEA Agency	Canadian Environmental Assessment Agency
CEE(s)	cumulative environmental effect(s)
C/EHO	Chief Environmental Health Officer
CF	Chief Forester
CJA	CJ Anderson Civil Engineering Inc.
CMT(s)	culturally modified tree(s)
CO	carbon monoxide
CORE	Commission on Resources and Environment
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPCN	Certificate of Public Convenience and Necessity
CRA	Controlled Recreation Area
Creekside	Creekside Resources Inc.
CSA	Canadian Standards Association
CWS	Canadian Wildlife Service

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DESCO	DESCO Distributed Energy Services Co. Ltd.
DFO	Fisheries and Oceans Canada
DLOCP	Duffey Lake Official Community Plan
DoE	Environment Canada
DoT	Transport Canada
EA	environmental assessment
EA Act	British Columbia's <i>Environmental Assessment Act</i>
EA Board	Environmental Assessment Board
EAO	Environmental Assessment Office
EA process	environmental assessment process
EA review	environmental assessment review
EBA	EBA Engineering Consultants Ltd.
ECA	equivalent-clear-cut area
Ecosign	Ecosign Mountain Resort Planners
EMP	Environmental Management Plan
ESC	Environmental Specifications and Conditions
FDP(s)	Forest Development Plan(s)
FEARO	Federal Environmental Assessment Review Office
FRAP	Fraser River Action Plan
FRBC	Forest Renewal BC
GBCS	Grizzly Bear Conservation Strategy
GBPU	grizzly bear population unit
GJ	gigajoule (a unit of power)
GPS	geographic positioning system
GVRD	Greater Vancouver Regional District
GWH	gigawatt-hour
HCA	<i>Heritage Conservation Act</i>
HRDC	Human Resources Development Canada
IWMS	Identified Wildlife Management Strategy
KWL	Kerr Wood Leidal Associates Ltd.
LGL	LGL Limited
LMDA	Labour Market Development Agreement
LNG	liquid natural gas
LRMP	Land and Resource Management Plan
LRMP process	Land and Resource Management Planning process
LtC	Licence to Cut
LTC	Lillooet Tribal Council
LUCO	Land Use Co-ordination Office
LWD	large woody debris

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MA	<i>Municipal Act</i>
MAETT	Ministry of Advanced Education, Training and Technology
MAG	Ministry of Attorney General
MCDCV	Ministry of Community Development, Co-operatives and Volunteers
MCF	Ministry for Children and Families
MDA	master development agreement
MEd	Ministry of Education
MEI	Ministry of Employment and Investment
MELP	Ministry of Environment, Lands and Parks
MEM	Ministry of Energy and Mines
MIOX	mixed oxidants
MMA	Ministry of Municipal Affairs
MoF	Ministry of Forests
MoH	Ministry of Health
MoTH	Ministry of Transportation and Highways
MoU	Memorandum of Understanding
MRA	mountain resort association
MRAr	mountain resort area
MRBIA	mountain resort business improvement area
MRID	mountain resort improvement district
MSBTC	Ministry of Small Business, Tourism and Culture
MSDES	Ministry of Social Development and Economic Security
MSR	<i>Municipal Sewage Regulation</i>
N/A	not applicable
NFR	non-filterable residue
NGR	NGR Resort Consultants Inc.
NOx	various nitrogen oxide compounds
NRCAN	Natural Resources Canada
NSR	No Staking Reserve
NWPA	<i>Navigable Waters Protection Act</i>
OCP	Official Community Plan
OFC	Office of the Fire Commissioner
PAS	Protected Areas Strategy
pH	measure of degree of acidity/alkalinity
project	Melvin Creek/Cayoosh mountain resort project
project committee	Melvin Creek/Cayoosh project committee
proponent	NGR Resort Consultants Inc.
RA	Responsible Authority under the CEAA
RCMP	Royal Canadian Mounted Police
RIB(s)	rapid infiltration basin(s)
RIC	Resource Inventory Committee
RM-FWH	MELP Regional Manager – Fish, Wildlife and Habitat Protection

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RM-PP	MELP Regional Manager – Pollution Prevention
RM-Waste	MELP Regional Manager - Waste
RM-Water	MELP Regional Manager – Water
ROS	Recreation Opportunities System
RPAT	Regional Protected Areas Team
RSBC	Revised Statutes of British Columbia
SLRD	Squamish-Lillooet Regional District
SO ₂	sulphur dioxide
SORT	Spotted Owl Recovery Team
SP(s)	Silvicultural Prescription(s)
SPEC	Society Promoting Environmental Conservation
STDs	sexually transmitted diseases
TDGA	<i>Transport of Dangerous Goods Act</i>
TEM	terrestrial ecosystem mapping
TFA	Transportation Financing Authority
TSA	Timber Supply Area
TSS	total suspended solids
TVBRIM	Terrestrial Vertebrate Biodiversity Reconnaissance Inventory Manual
UMA	UMA Engineering Ltd.
Urbanics	Urbanics Consultants Ltd.
UV	ultraviolet
WARS	Wildlife Accident Report System
WCB	Workers Compensation Board
Wildeor	Wildeor Wildlife Research and Consulting
WMA	<i>Waste Management Act</i>

INTRODUCTION

CHAPTER 1.0



1.0 INTRODUCTION

1.1 BACKGROUND

NGR Resort Consultants Inc. (hereafter referred to as 'NGR' or the 'proponent') proposes to develop a four-season, 14,186-bed-unit, mountain tourism resort in the Melvin Creek valley, located north of the Duffey Lake Road between Pemberton and Lillooet (see map in Figure 1). Winter activity would focus on snow sports, primarily alpine skiing, cross-country skiing and snowboarding. In summer, the alpine scenery in the area would support sightseeing, hiking, walking and biking. Village-based sports such as tennis, golf and swimming would also be offered.

On November 7, 1996, the Environmental Assessment Office (EAO), pursuant to the British Columbia *Environmental Assessment Act* (EA Act), accepted for review NGR's application for a project approval certificate for the Melvin Creek/Cayoosh resort project (the 'project'). The Melvin Creek/Cayoosh project committee (the 'project committee') set up under the EA Act to oversee the review of this project application has now completed the necessary environmental assessment.

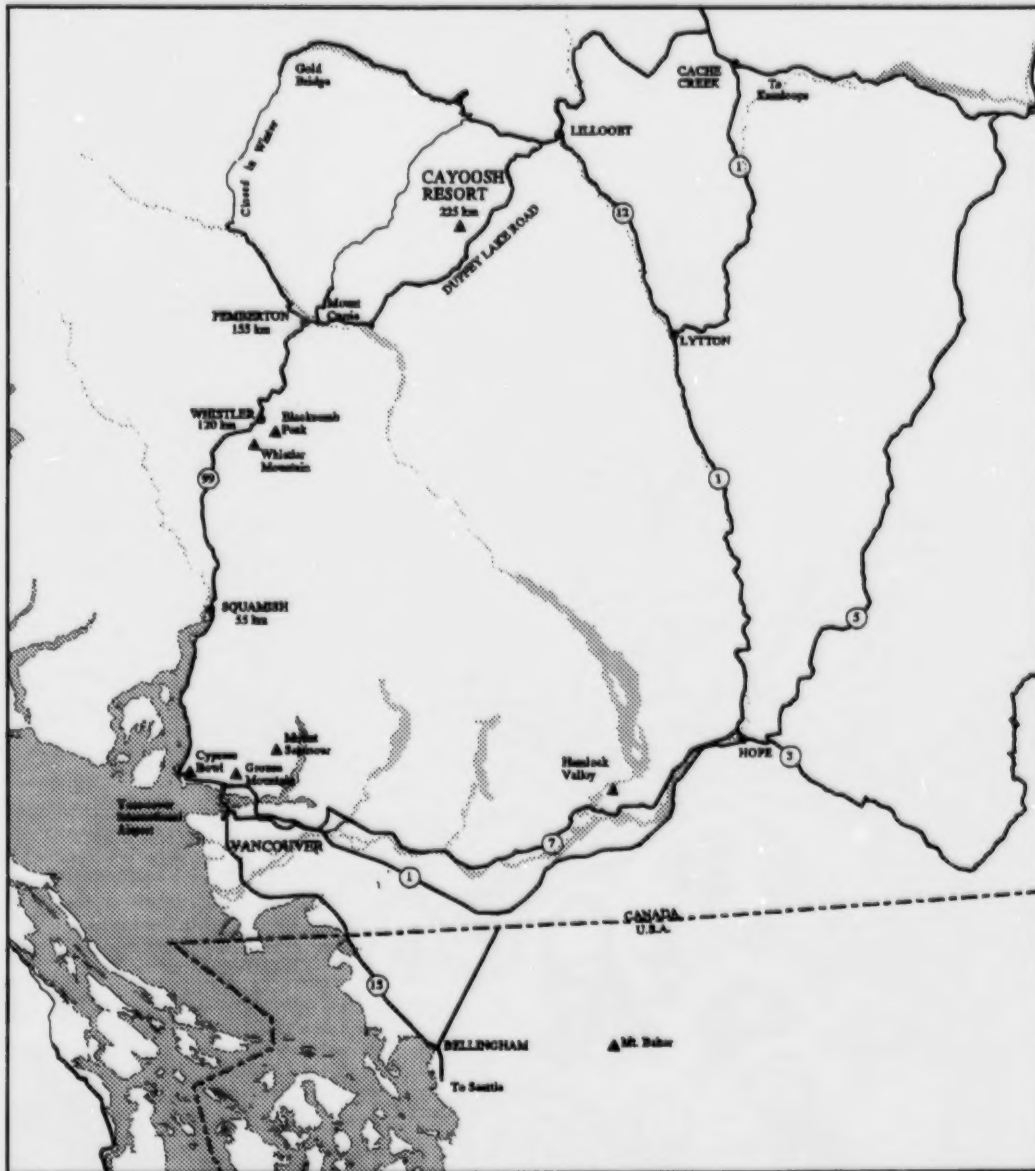
1.2 PURPOSES OF THIS DOCUMENT

The purposes of this document (the project committee recommendations report) are to:

- summarise how the review of the project and the results of the review support the purposes of the EA Act;
- summarize the review of NGR's various submissions – the application, the project report, plus several smaller supplementary submissions – filed under the EA Act;
- summarize the identified potential environmental, economic, social, cultural, heritage and health effects of the project, and indicate measures required to prevent or mitigate any significant adverse effects;
- present, in accordance with section 29(4) of the EA Act, the project committee's recommendations to the Executive Director of the EAO (together with the committee's reasons), submitted in preparation for a decision on project certification, to be taken under section 30 of the EA Act by the Minister of Environment, Lands and Parks and the Minister of Employment and Investment; and
- meet the requirements of a screening report pursuant to the *Canadian Environmental Assessment Act* (CEAA). Fisheries and Oceans Canada (DFO), the Responsible Authority (RA) under the CEAA, will base a CEAA conclusion for the project on the contents of the project committee recommendations report (the screening report), advice from expert federal authorities, and other factors relevant to federal decision-making.

*Melvin Creek/Cayoosh mountain resort project
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June 30, 2000*

Figure 1 – LOCATION MAP



ENVIRONMENTAL ASSESSMENT REVIEW

CHAPTER 2.0

2.0 ENVIRONMENTAL ASSESSMENT REVIEW

2.1 OVERVIEW OF BC's ENVIRONMENTAL ASSESSMENT PROCESS

2.1.1 SCOPE AND PURPOSE

On June 30, 1995, the *Environmental Assessment Act (EA Act)* was proclaimed, thereby combining previous review processes for energy, major industrial and mining projects into a single review process. The environmental assessment (EA) process is now applied to major projects in the following sectors: industrial/manufacturing, mining, energy, water management (dams, dikes, reservoirs), waste disposal, food processing, transportation and tourism (primarily destination resorts). For details on the applicability of the provincial EA process to the Melvin Creek/Cayoosh mountain resort project, see below, section 3.2.1 (*Provincial EA Trigger*).

The EA process is intended to support provincial goals for sustainability by ensuring that those projects which are approved can be constructed in a manner which minimizes adverse environmental and other effects to the extent possible, while contributing economic and social benefits over the long term. To this end, the *EA Act* establishes a comprehensive, predictable, open, accountable, integrated, timely and neutrally administered EA process for the assessment of the environmental, economic, social, cultural, heritage and health effects of a wide variety of major development proposals in British Columbia.

The *EA Act* provides for participation in the assessments of reviewable projects by the public, project proponents, First Nations, municipalities and regional districts, provincial and federal agencies, and where appropriate, neighbouring jurisdictions. Reviews are neutrally administered by the EAO, and steered by inter-governmental project committees set up for each project review, and comprised of representatives of federal, provincial and local government agencies and potentially affected First Nations.

The *EA Act* requires project documentation to be placed on a project registry so that it is accessible to the public, and provides for assured public comment periods with prescribed timelines, as well as mandatory public and First Nations consultation.

2.1.2 ROLE OF PROJECT COMMITTEES

Under the *EA Act*, project committees, through their individual members, are the primary contributors of policy and technical expertise to the review of each project, and are expected to:

- assess the adequacy of the proponent's public and First Nations consultation;
- analyse input received from the public, government agencies and First Nations in response to invitations to comment at each stage of project review;
- assess the potential effects of projects, and the capacity to prevent or mitigate the adverse effects of projects; and
- provide analysis, advice, and recommendations to the Executive Director of the EAO, the Minister of Environment, Lands and Parks and the responsible minister for the particular type of project under review.

Working with the EAO, project committees have overall responsibility for ensuring that project reviews:

- are implemented in a comprehensive and technically sound manner;
- involve all of the potentially interested parties; and
- are conducted in a timely and efficient manner, and, to the extent possible, in accordance with the legislated time limits established for individual review steps under the *Time Limits Regulation*.

2.1.3 PROVIDING FOR FIRST NATIONS PARTICIPATION

The main goals of First Nations participation in the EA process are to:

- notify, and provide information to, First Nations at an early stage in the planning of proposed reviewable projects which may be of interest or concern to them;
- ensure that there is adequate opportunity for First Nations input into the identification and resolution of concerns and issues raised with respect to proposed projects and their potential effects;
- ensure that local information, knowledge and concerns of First Nations contribute to both the project design process of the proponent and the decision making process of government;
- through traditional use studies or other means, establish the extent (if any) to which a project may infringe upon the exercise of aboriginal rights in the project area, and where such infringements are possible, to explore options for preventing, mitigating or compensating for potential adverse effects; and
- ensure that, to the extent possible, where projects do proceed, they do so without infringing on aboriginal rights or title.

Under the *EA Act*, potentially affected First Nations must be notified about project reviews conducted under the EA process, informed of their opportunities to provide input, provided with information on projects which are subject to EA review, and consulted as the review progresses. The First Nations notification, access to information and consultation requirements for each project review are determined on a project-specific basis, and are tailored to the specific circumstances of each review. For most reviews, the responsibilities for notification, access to information and consultation are shared between the proponent and the EAO.

A key provision of the *EA Act* is the EAO's obligation to invite potentially affected First Nations to participate as members of the project committee. Typically, the EAO and a project committee prefer to rely on the advice of First Nations, whether members of the committee or not, in designing notification, access to information and consultation measures targeted to First Nations people.

2.1.4 PROVIDING FOR PUBLIC PARTICIPATION

The main goals of public participation in the EA process are to:

- ensure an open and accountable review process;
- notify, and provide information to, the public at an early stage in the planning of proposed reviewable projects;
- ensure that there is adequate public input into the identification and resolution of concerns and issues raised with respect to proposed projects and their potential effects; and
- ensure that local public and community-level information, knowledge and concerns contribute to both the project design process of the proponent and the decision making process of government.

Under the *EA Act*, the public must be notified about project reviews conducted under the EA process, informed of their opportunities to provide input, provided with information on projects which are subject to EA review, and consulted as the review progresses. Formal public comment periods are provided for in the *EA Act* to ensure that the public has an adequate opportunity to review key documentation generated during the EA review of a project, including the proponent's application, the project committee's draft project report specifications, and the proponent's project report.

The public notification, access to information and consultation requirements for each project review are determined on a project-specific basis, and are tailored to the specific circumstances of each review. For most reviews, the responsibilities for notification, access to information and consultation are shared between the proponent and the EAO.

Notification typically entails a combination of newspaper advertising and the direct mail-out of notices, primarily to communicate information on:

- the availability of documentation for public review;
- the scheduling of public comment periods; and
- the scheduling of open forums such as public meetings.

Access to information is achieved by making available information about both the EA process and the nature of the project through:

- placement of review-related records on the central project registry in Victoria;

- posting of documents on the EAO's website to permit Internet access;
- the establishment of satellite document repositories, located primarily in the region of development, to house the same records; and
- the holding of open houses.

Consultation is achieved through interactive forums designed to receive and discuss public feedback, and may entail measures such as:

- organising public meetings;
- participating in one-on-one meetings with representatives of public interest groups; and
- establishing a public advisory committee.

2.1.5 EA REVIEW STAGING

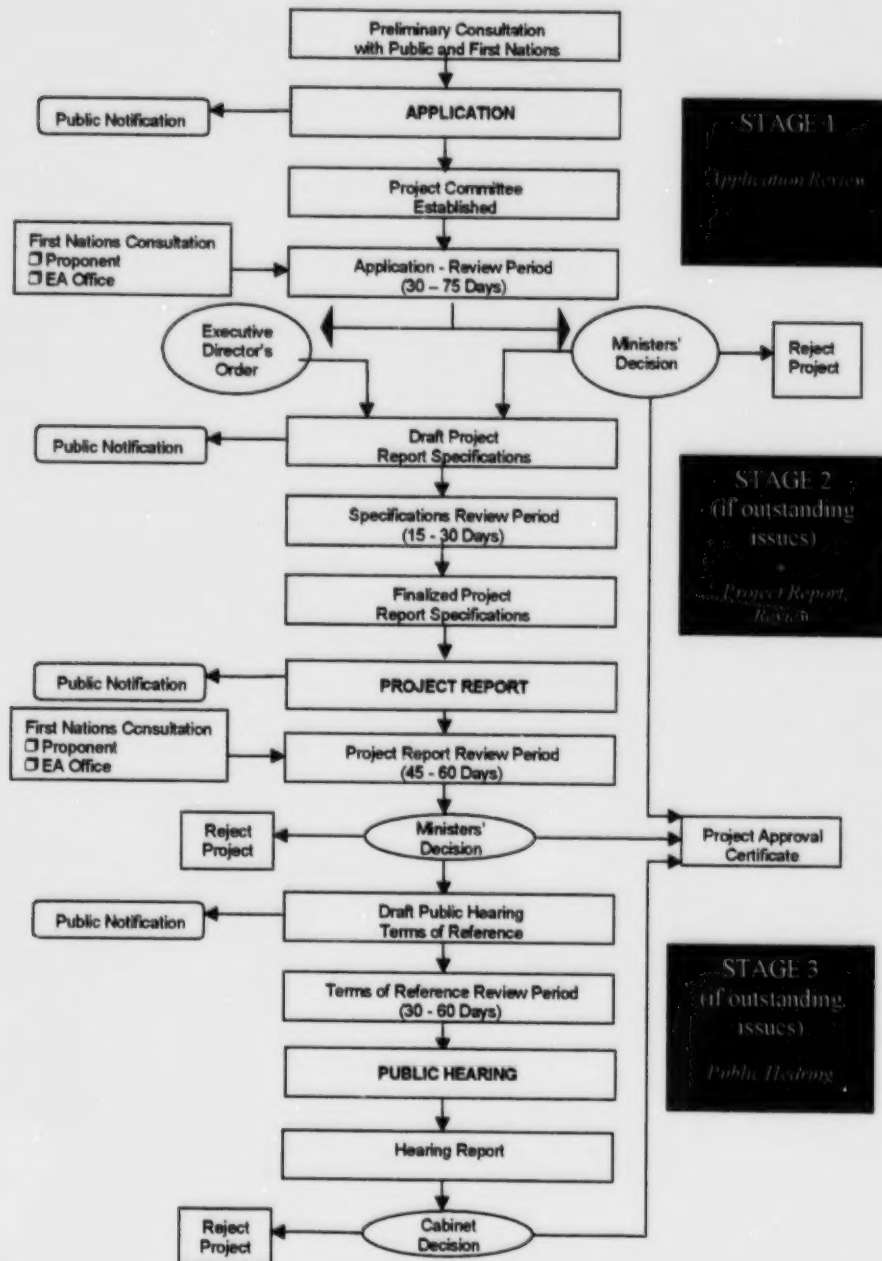
The *EA Act* establishes a staged assessment process through which the potential effects of projects are identified, and the potential means of preventing or mitigating any adverse effects are evaluated. The *EA Act* provides for up to three stages of review, and project reviews are tailored to the complexity and significance of a project's effects. The staging of the EA process is graphically depicted in the flowchart in Figure 2. Prescribed timelines are legislated for each step in the review process to ensure timely assessments.

Application review stage - At this stage, the intent is to identify all issues, and to determine whether or not a proponent's application presents analysis and/or proposes impact management measures which resolve concerns with respect to any potential adverse effects. If this is the case, the project committee refers the application to ministers for an EA certification decision following application review. To the extent that this may not be the case, the application review is used to identify any outstanding issues, thereby establishing the scope of the remainder of the review.

Project report review stage - A proponent will be notified that the project committee requires a project report where, in the committee's opinion, further issues need to be addressed in more depth. A project report is then prepared by the proponent during the second review stage. The project report review stage is intended to determine whether or not specified outstanding issues are resolvable. Following project report review, the project committee refers the application to ministers for an EA certification decision.

Public hearing stage - If ministers consider that there continue to be outstanding issues at the conclusion of the project report review stage, they have the option to invoke a third stage of EA review by directing the Environmental Assessment (EA) Board, set up under section 48 of the *EA Act*, to hold a public hearing on issues which they specify in terms of reference prepared by them for the Board.

Figure 2 – STEPS IN THE EA PROCESS



2.1.6 EA DECISION MAKING

The stage is set for decision making on the proponent's application when the project committee makes its recommendations to ministers on the question of project certification. Project certification is typically only recommended by a project committee at the conclusion of the application review stage where all policy-type issues have been resolved, and all technical issues have been addressed in sufficient depth to satisfy the project committee that they can be managed effectively by proven affordable means. Where certain issues remain unresolved, the project committee will require a project report from the proponent on these issues. If, after reviewing the project report, certain issues continue to be unresolved, or where, for whatever reason, the project committee cannot agree unanimously on a recommendation, it may:

- recommend one of the decision options – certification (with conditions), refusal to certify, or a public hearing - based on majority view of committee members; or
- instead, decide to present, for the consideration of ministers, various decision options, together with an analysis of their pros and cons.

To ensure balance in decision making, the *EA Act* requires joint decision-making by the Minister of Environment, Lands and Parks and the minister responsible for the sector within which each project falls (the 'responsible minister'). The responsible minister for ski resort projects is the Minister of Employment and Investment. In making their decisions, the ministers are required to consider the recommendations of the project committee as referred to them by the Executive Director of the EAO, but are not bound by these recommendations. If an application is referred to the EA Board for a public hearing, the final certification decision is made by Cabinet. In making a decision, ministers or Cabinet will consider the potential benefits of the project, as well as the potential adverse effects.

At the end of the application review stage, if an application is referred to ministers by the project committee, the ministers' decision options are to certify the project, to refuse to certify it, or to order that the proponent prepare a project report. At the end of the project report review, the ministers' decision options are to certify the project, to refuse to certify it, or to order that the EA Board hold a public hearing. After a public hearing by the Board, Cabinet may either certify the project or refuse to do so.

2.1.7 EA PROJECT CERTIFICATION

A project approval certificate typically incorporates approval of those project components which, in the project committee's view, have been addressed in adequate detail in the application and/or project report to demonstrate that any associated issues are resolvable by feasible and affordable means. Project components for which this is not the case may be (and usually are) excluded from the certificate, although, unless

prevented by the conditions in the certificate itself, it may be possible for the proponent to re-apply in the future for approval of such components.

Project approval certificates are normally issued for the life of the project, and have the flexibility to accommodate the staging and the scheduling envisaged for the development. However, should development not immediately proceed, a certificate does not remain in good standing indefinitely. The *EA Act* provides that a certificate expires if the development has not been substantially started within three to five years of certificate issuance (the exact term is indicated in the certificate). The *EA Act* does contain time extension provisions in such circumstances, which may be invoked by the Minister of Environment, Lands and Parks upon receipt of an application from the proponent to extend the time available to implement project start-up.

2.1.8 POST-CERTIFICATION PHASE

Permits, licenses and other approvals - If and when a project approval certificate is issued, proponents must still obtain the various licenses, permits and other forms of statutory approval which are necessary to construct and operate their projects. Applications for these approvals may be filed at any time (i.e. while the EA process is being conducted or after a project approval certificate has been issued), but completion of the processing of permit applications and permit issuance cannot take place until after a project approval certificate has been issued (per section 6 of the *EA Act*).

Review of future proposals to modify a certified project - If a project approval certificate and other necessary permits to construct and operate a project have been issued, the proponent will be expected to develop the project in accordance with the certificate and these other regulatory approvals, unless modifications to the project are lawfully approved.

If the proponent wishes to modify the approved project layout or design, or the approved manner in which it is to be constructed or operated, or wishes to expand the project by adding new components, the proponent must apply for approval from the appropriate authority(ies). The review mechanism used to evaluate such applications will vary, depending on the nature of the modification or expansion. In principle, four situations could arise:

- the modification is reviewable under the *Reviewable Projects Regulation*, pursuant to section 3 of the *EA Act*, in which case, the EA process applies;
- the modification is not automatically reviewable under section 3 of the *EA Act*, but is reviewed:
 - either under formal provisions of the *EA Act*, because specific provision has been made, in the conditions of the project approval certificate, for formal EA review of that particular type of modification – this approach is uncommon;
 - or (more likely), under a specially tailored process – not necessarily formal EA review – in situations where the certificate provides for the EAO to set up a

review process to consider proposed changes which may have a significant adverse effect – such provisions in certificates typically remain in effect until a project begins commercial-scale operations;

- the modification is not automatically reviewable under section 3 of the *EA Act*, but the Minister of Environment, Lands and Parks uses his/her discretion under section 4 of the *EA Act* to designate the project modification to be reviewable (this can occur only if the modification has not been substantially started); or
- none of the above circumstances apply, which is the most common situation, and the modification is reviewable under the routine regulatory approval processes of relevant provincial, federal and/or local government agencies.

2.2 OVERVIEW OF FEDERAL ENVIRONMENTAL ASSESSMENT PROCESS

2.2.1 BACKGROUND

Both the federal and provincial governments enacted new EA legislation in 1995 (the *Canadian Environmental Assessment Act (CEAA)* was proclaimed on January 19, 1995). There is some overlap in the respective applicability of the two EA statutes to proposed developments, and it is possible for a project in British Columbia to be reviewable under both the federal and provincial EA processes.

Projects may be subject to the federal process if a 'federal authority' exercises one or more of the following duties, powers or functions in relation to a project:

- it proposes the project;
- it contributes any form of financial assistance to the project;
- it sells, leases or otherwise transfers control or administration of federal lands to enable the project to be carried out; and/or
- it exercises a regulatory duty in relation to the project, such as issuing or granting a statutory authorisation to allow the project to proceed (e.g. a permit or license or other approval), where this form of authorisation is cited in the *Law List Regulations*, enacted under the *CEAA*.

A 'federal authority' is defined as a federal minister of the Crown, an agency or body of the federal government which reports through a federal minister to the Crown, or a federal department. A 'Responsible Authority' (RA) is a federal authority that is required to ensure that an environmental assessment is carried out. DFO is the responsible authority for this review.

For details on the applicability of the federal EA process to the Melvin Creek/Cayoosh project, see below, section 3.2.2 (*Federal EA Trigger*).

2.2.2 LEVELS OF FEDERAL EA REVIEW

Under the CEAA, all assessed projects receive a level of EA review which is tailored to their impact potential. The degree of assessment largely depends on the type and size of the project, and the scale and complexity of the possible effects of the project. Thus, there are four EA review options under the CEAA - screening, comprehensive study, mediation and panel review, which are briefly mentioned below.

2.2.2.1 SCREENING

The Melvin Creek/Cayoosh project was subject to a screening level of assessment, which is 'self-directed' by the designated RA. Under a screening, the RA has the greatest degree of flexibility and management control over the scope and pace of assessment. Screenings vary in duration and depth of analysis, depending on the particular circumstances of the proposed project, the characteristics of the existing environment and the likely environmental effects. In accordance with section 16(1) of the CEAA, a screening must address the following factors:

- the environmental effects of the project, including cumulative environmental effects (CEEs), and the effects of possible accidents or malfunctions;
- the significance of the environmental effects;
- technically and economically feasible measures that would reduce or eliminate any significant adverse environmental effects of the project;
- any other matters relevant to the screening that the RA feels are necessary for an accurate assessment of the environmental effects; and
- public comments, if any.

At the conclusion of a screening assessment, the RA must decide whether to approve the project, reject it, or opt for further assessment by means of either a panel review or mediation.

2.2.2.2 COMPREHENSIVE STUDY

Such assessments are again conducted by the RA, but are typically more intensive and rigorous than those required for a screening. The *Comprehensive Study List Regulations*, enacted under the CEAA, itemise those projects for which a comprehensive study assessment is required if the CEAA is triggered. In accordance with section 16(2) of the CEAA, a comprehensive study must consider, in addition to the factors to be addressed for a screening level of study, the following:

- the purpose of the project;
- alternative technically and economically feasible means of carrying out the project, and the environmental effects of these alternatives;

- the need for, and requirements of, any necessary follow-up programming (e.g. monitoring), should the project proceed; and
- the capacity of those renewable resources which may be significantly affected by the project to meet present and future needs.

2.2.2.3 MEDIATION

During or following a screening or comprehensive study, the RA may refer the project to the federal Minister of the Environment, who may order that a mediation process be implemented. This is a voluntary process of negotiation in which an independent and impartial mediator assists interested parties to resolve outstanding issues. Mediation may be used in situations where all of the interested parties have been identified, all have indicated their willingness to participate in a mediation process, and there is some reasonable likelihood of a consensus being reached.

2.2.2.4 PANEL REVIEW

During or following a screening or comprehensive study, the RA may refer the project to the federal Minister of the Environment, who may order that a panel review be undertaken. A panel review is an environmental assessment conducted by an independent public review panel. The Minister of the Environment appoints the panel and establishes the terms of reference for the review after consulting with the RA. A panel review may be conducted jointly with another jurisdiction.

2.3 FEDERAL/PROVINCIAL CO-OPERATION

Both British Columbia and Canada enacted environmental assessment legislation in 1995, and a single development may be subject to both processes. A co-operation agreement entitled *Canada-British Columbia Agreement for Environmental Assessment Cooperation* was signed between the provincial and federal governments in April of 1997. The agreement is consistent with the principles and approaches developed later by the Canadian Council of Ministers of the Environment (CCME). The main goal of this agreement is to avoid duplication, and to subject individual projects to a single review process which meets the needs of both governments. At the conclusion of a co-operative project review, however, both governments retain their respective decision-making responsibilities and authority.

The *EA Act* requires that the federal government be invited to comment on key documents prepared by the proponent of a reviewable project. In addition, representatives of the federal government must be invited to sit on each project committee. Federal representatives on the project committee ensure that issues of federal concern are identified early in the EA process.

**REVIEW PROCESS FOR PROPOSED
MELVIN CREEK/CAYOOSH
MOUNTAIN RESORT PROJECT**

CHAPTER 3.0

3.0 REVIEW PROCESS FOR PROPOSED MELVIN CREEK/CAYOOSH MOUNTAIN RESORT PROJECT

3.1 EARLY (PRE-EA) PROJECT REVIEW HISTORY

In 1991, the provincial government, under the auspices of its Commercial Alpine Ski Policy (CASP), concluded, from a policy perspective, that it wished to give detailed consideration to the opportunity to develop a destination ski resort in the Melvin Creek valley. This government interest is reflected in the following government decisions to date:

- an 'Expression of Interest' to develop a destination ski resort was accepted for consideration and processed under CASP (in August 1990);
- the opportunity to develop a destination ski resort was the subject of a proposal call process under CASP (June to August 1991);
- a proposal was accepted under CASP, and NGR was informed that it had been granted 'sole proponent' status (September 1991);
- the proposal was made subject to the *EA Act* by means of a Transition Order, dated June 30, 1995, and issued pursuant to section 93 of the *EA Act*; and
- an 'Interim Agreement' was signed with NGR under CASP on April 27, 1996.

The above-mentioned Interim Agreement was concluded between MELP (the former BC Lands Division, now the BC Assets and Land Corporation – or BCAL) and NGR in April 1996. It confirmed NGR's 'sole proponent' status, and provided it with the authority to enter onto Crown land for the purpose of carrying out investigations and assessments necessary for the EA review of the Melvin Creek/Cayoosh mountain resort project. The Interim Agreement established the basis of the relationship between the province and NGR, clarified the roles and responsibilities of each party to the Agreement, and rationalized the linkage between CASP and the EA process.

For the present, the requirements of the CASP process for evaluating the resort proposal are being met through the EA process. If a project approval certificate is issued following EA review of the project, then the CASP process will resume at its final stage. This stage entails the preparation and review of a detailed ski area master plan, followed by the negotiation of a master development agreement between NGR and the province (BCAL), which will function as the framework for project development.

EA review of the project formally commenced in December of 1996 with release of NGR's application for public review and comment, and the setting up of a project committee under section 9 of the *EA Act* to steer the review.

3.2 APPLICABILITY OF PROVINCIAL AND FEDERAL EA PROCESSES

3.2.1 PROVINCIAL EA TRIGGER

NGR must apply for a project approval certificate under the *EA Act* because the Melvin Creek/Cayoosh project is a reviewable project within the meaning of section 53(1)(d) of the *Reviewable Projects Regulation* (this regulation was enacted on June 30, 1995, pursuant to section 3 of the *EA Act*). The construction of a new ski resort development is reviewable where, when completed, the facility will have either:

- "....(i) *a developed base area of 150 hectares or more, including the infrastructure and facilities required at the base of the ski hill or hills to provide accommodation, meals, entertainment, transportation facilities, parking and ancillary services, but not including the ski runs,*
- (ii) *2,000 bed units or more, or*
- (iii) *a maximum rate of liquid waste discharge permitted under the Waste Management Act of 800 m³ or more per day..."*

While the resort proposal has a base area of less than 150 hectares, and while the volume of liquid waste discharge at full build-out has not yet been reliably estimated, the latest form of the proposal, as presented in NGR's July 1999 project report, entails the installation of up to 14,186 bed units of accommodation (where a 'bed unit' represents sleeping accommodation for one person).

Section 5 of the *EA Act* states that a project approval certificate must be obtained under the *EA Act* before a reviewable project can proceed, hence NGR, as proponent, has made application for a certificate.

Since the project was already being reviewed under the CASP process when, on June 30, 1995, the new legislation took effect, the Minister of Environment, Lands and Parks and the Minister of Employment and Investment (who is the responsible minister within the meaning of the *EA Act*) signed a Transition Order which also took effect on that date, placing the project at the application review stage of the EA process.

3.2.2 FEDERAL EA TRIGGER

The federal government advised the EAO early in the provincial review that the federal EA process was triggered for the Melvin Creek/Cayoosh project, since an approval under section 5(1) of the *Navigable Waters Protection Act (NWP)* will be required for any bridge crossing(s) of Cayoosh Creek, which is deemed to be a 'navigable water' under the *NWPA*, and the need for such an authorisation triggers the federal EA process under section 5(1)(d) of the *CEAA*.

Since the CEAA is triggered, federal agencies must ensure that, in conducting their review, the requirements of this federal statute are satisfied. Given the navigable waters trigger, Fisheries and Oceans Canada (DFO) is the designated Responsible Authority (or RA) for this review.

3.2.3 LEVEL OF FEDERAL EA REVIEW – SCREENING

DFO, with the advice of the Canadian Environmental Assessment Agency (CEA Agency), determined that a screening study (rather than a comprehensive study) is required for the Melvin Creek/Cayoosh project (see section 2.2.2 for more information on CEAA levels of review). A comprehensive study is not triggered under the CEAA unless a proposed development (or one or more of its components) is of sufficient size to be listed in that Act's *Comprehensive Study List Regulations*, which is not the case here.

At any time during the screening, the RA may ask the federal Minister of the Environment to refer the project to either mediation or a panel review where:

- it is uncertain whether or not the project is likely to cause significant adverse environmental effects;
- the project is likely to cause significant adverse environmental effects and these effects may be justified in the circumstances; or
- public concern warrants it.

3.3 GOVERNMENT PARTICIPATION IN EA REVIEW

3.3.1 PROJECT COMMITTEE MEMBERSHIP AND MEETINGS

Following receipt of NGR's application documentation, the EAO took steps to set up a project committee to steer the review of the proposal. The project committee, consisting of federal, provincial and local government agencies and (at one time, but not currently) some First Nations, began review of NGR's documentation in December 1996, and held its first meeting in Lillooet on January 9, 1997. Seven other meetings were also held – either in Lillooet or by teleconference – on March 12, July 24 and September 24, 1997, July 27, 1999, and March 17, April 12 and May 3, 2000 respectively. All of these meetings were conducted as open meetings except where discussing the committee's recommendations to ministers. Thus part of the meeting on March 17, 2000, and all of the subsequent meetings were closed to observers.

Government attendees at meetings of the project committee have included both formal members and observers (usually present in the capacity of technical advisors to formal agency representatives), while some government agencies are reviewing the project without participating directly in the committee's proceedings. The members of the

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Melvin Creek/Cayoosh project committee at the time of referring the NGR application to ministers for a certification decision are as follows:

Province of British Columbia:

- * Environmental Assessment Office (EAO) - Chair
- * Ministry of Environment, Lands and Parks (MELP)
- * Ministry of Employment and Investment (MEI) - responsible ministry
- * Ministry of Transportation and Highways (MoTH)
- * Ministry of Health (MoH)
- * Ministry of Small Business, Tourism and Culture (MSBTC - tourism)
- * Ministry of Small Business, Tourism and Culture (MSBTC - archaeology)
- * BC Assets and Land Corporation (BCAL)
- * Ministry of Forests (MoF)

Government of Canada:

- * Fisheries and Oceans Canada (DFO)

Local Governments:

- * Squamish-Lillooet Regional District (SLRD)
- * District of Lillooet
- * Village of Pemberton
- * Resort Municipality of Whistler

First Nations:

- * [none at the time of this referral to ministers]

Note - *During the negotiations which led to the signing of the agreement on First Nations studies on October 5, 1999, the eleven bands of the St'at'imc Nation opted not to sit as formal members of the project committee. It should be noted that the agreement does provide for a St'at'imc representative to observe the committee's proceedings. A few First Nations groups had participated in the project committee's proceedings, either officially or informally, at various times earlier in the review. These were:*

- * N'Quat'qua (Anderson Lake) Indian Band
- * In-SHUCK-ch/N'Quat'qua Council
- * Lillooet Tribal Council

3.3.2 OTHER AGENCY PARTICIPATION IN REVIEW

Various other parties have been accorded the status of 'reviewing agency' in the EA review of the project. This means that they have been provided with key documentation generated for the EA process for information purposes. They have been invited to provide comments on much of this material, but have not done so in all cases.

Province of British Columbia:

- * Ministry of Municipal Affairs (MMA)
- * Ministry of Social Development and Economic Security (MSDES)
- * Ministry for Children and Families (MCF)
- * Ministry of Energy and Mines (MEM)
- * Ministry of Attorney General (MAG)

Government of Canada:

- * Environment Canada (DoE)
- * Canadian Environmental Assessment Agency (CEA Agency)

Local Governments:

- * District of Squamish

First Nations:

- * St'at'imc Nation
- * In-SHUCK-ch/N'Quat'qua Council
- * Lillooet Tribal Council
- * N'Quat'qua (Anderson Lake) Indian Band
- * Samahquam Indian Band
- * Skookum Chuck Indian Band
- * Xa'xtsa (Douglas) Indian Band
- * Xwisten (Bridge River) Indian Band
- * Sekw'elw'as (Cayoosh Creek) Indian Band
- * Tl'itl'Kt (Lillooet) Indian Band
- * Xaxli'p (Fountain) Indian Band
- * Ts'Kw'aylaxw (Pavilion) Indian Band
- * Chalath (Seton Lake) Indian Band
- * Lil'wat Nation (Mount Currie Indian Band)

Note – *During the project review, certain other agencies were consulted about specific issues raised by review participants, but were not regular recipients of review-related documentation:*

- * *Human Resources Development Canada (HRDC)*
- * *Ministry of Advanced Education, Training and Technology (MAETT)*
- * *Ministry of Community Development, Co-operatives and Volunteers (MCD CV)*
- * *Ministry of Education (MEd)*
- * *Office of the Fire Commissioner (OFC)*
- * *Transport Canada (DoT)*

3.4 EA REVIEW TO DATE

3.4.1 REVIEW OF PROPONENT'S APPLICATION

NGR submitted a two-binder application for a project approval certificate for the proposed Melvin Creek/Cayoosh mountain resort project on October 10, 1996. The project is also known as the 'Cayoosh resort project', and until mid-1997, when NGR requested a re-naming, was referred to by government for EA review purposes as the 'Cayoosh Creek mountain resort project'.

The application was screened according to section 7 of the *EA Act*, and was found acceptable for formal detailed review, subject to NGR providing some supplementary information, as identified in a letter of response from the EAO, dated October 17, 1996. On November 7, 1996, NGR resubmitted the application with the requested material, and provided the additional copies necessary for full review in early December 1996.

Review of the application officially commenced with the publishing of newspaper advertisements in early December 1996, announcing the availability of the submission for public review. At the same time, the EAO, in accordance with section 9 of the *EA Act*, invited the following to become members of the Melvin Creek/Cayoosh project committee (project committee) to provide advice, analysis and recommendations on the project:

- provincial government ministries;
- federal government departments;
- the municipal and regional governments in the vicinity of the project; and
- First Nations whose traditional territory includes the site of the project or is in the vicinity of the project.

The role and activities of project committees are outlined in section 2.1.2, above, and the membership of the Melvin Creek/Cayoosh project committee is reported in section 3.3.1, above.

Copies of the application were sent to provincial, federal and local governments, as well as First Nations. The application was made available at the EAO project registry in Victoria, and at satellite repositories established at local libraries in Kamloops, Lillooet, Pemberton, Squamish, Whistler and Vancouver. The introductory summary to the application was posted on the EAO Internet website.

In accordance with section 16 of the *EA Act*, a review period was established during which time the public was invited to provide comments on the application to the EAO. The review period was set within the legislated range, officially commencing on December 12, 1996, and concluding on February 25, 1997.

At a March 12, 1997 meeting, following review of the application, the project committee considered all agency, First Nations and public comments received on the application.

Some members of the project committee identified significant outstanding concerns. For this reason, the project committee chair instructed the committee that a second review stage would be required, since, under section 19(2)(b) and (c) of the *EA Act*, project committees are enjoined from referring applications to ministers for a certification decision when significant outstanding issues remain to be addressed. On March 17, 1997, the project committee chair wrote to NGR, in accordance with section 19(1) of the *EA Act*, ordering that NGR prepare a project report.

3.4.2 DEVELOPMENT OF PROJECT REPORT SPECIFICATIONS

The first step after the decision to require a project report was for the project committee to prepare project report specifications, which set out the information, analyses, plans or other records which the project report needs to contain (per section 21 of the *EA Act*).

Draft project report specifications were prepared and provided to NGR on July 29, 1997. The time provided under the *EA Act* to complete this step is 20 days. However, a timeline extension of 110 days was approved by the MELP Minister, to allow the project committee to take into account, in preparing draft specifications, some supplementary technical information provided by NGR on outstanding issues. The draft specifications were made available to government agencies, First Nations and the public for review and comment on July 29, 1997, and the official public comment period extended for 29 days from August 11 to September 9, 1997, during which the public was invited to submit comments on the draft specifications. All comments received were provided to NGR and considered by the project committee in finalising the project report specifications.

Following the close of the public comment period, the project committee had 20 days (until September 29, 1999) to finalize the project report specifications. This legislated timeline could not be met, and an 11-day timeline extension was granted by the Minister of Environment, Lands and Parks. The final specifications, dated October 7, 1997, were provided to NGR on October 10, 1997, together with a request to use them as the basis for preparing a project report for submission to the EAO (per section 24 of the *EA Act*).

3.4.3 AMENDMENTS TO PROJECT REPORT SPECIFICATIONS

The finalized October 1997 project report specifications have been formally amended twice by the project committee.

Wildlife resources - In late 1997, NGR raised questions and sought clarification with respect to the wildlife resources reporting requirements contained in section D.3(B) of the specifications. Based on discussions between NGR and MELP in the winter of 1997/98, the project committee agreed to endorse proposed amendments to the specifications, since they were deemed to provide more specific language on the amount of detail and scope of the wildlife studies required for EA review purposes. It

was reasoned that, for the project committee's initial screening of NGR's project report, once submitted, the proposed amendments would facilitate the committee's determination of whether or not the wildlife reporting requirements had been generally complied with.

The proposed amendments were subject to a period of public review and comment, extending from April 14 to April 30, 1998. After taking into account the public comments received, the project committee decided to confirm the amendment of the wildlife specifications as proposed. On July 10, 1998, it notified NGR of its decision by letter, and announced its decision to the public on the same date by means of an open letter to the public, distributed to all persons on EAO's mailing list for this project review.

First Nations studies - In November 1998, St'at'imc representatives notified the EAO of their preference for the EAO to take the lead responsibility for most of the First Nations study requirements itemised in section G of the October 7, 1997 finalized specifications. On July 2, 1999, the EAO issued a formal public notice that the Melvin Creek/Cayoosh project committee had approved amendments to section G to eliminate reporting requirements which had hitherto been considered NGR's responsibility. NGR was still expected to report in its project report on its First Nations consultations (per two of the original specifications - G.1#4 and #5).

Agreement between St'at'imc Bands and the EAO on how to address the other First Nations study requirements was eventually reached with the signing of the study agreement on October 5, 1999 (see sections 4.2.1 and 6.6.1 for details).

3.4.4 REVIEW OF PROPONENT'S PROJECT REPORT

On July 9, 1999, NGR submitted the *Cayoosh Resort Project Report* to the EAO for review. Under the *EA Act*, the project committee had up to 25 days following the receipt of the project report (from July 9, 1999 to August 3, 1999) to screen the project report. The intent of screening was for the project committee to determine whether or not the project report addressed all of the reporting requirements in the final form of the project report specifications, as amended, and thus, could be accepted for formal detailed review. During the screening period, some apparent data deficiencies were discussed with NGR, which provided supplementary information on certain issues.

The project committee met by conference call on July 27, 1999 to screen the project report, including the supplementary information. The project committee was satisfied that the information requested in the specifications had been provided, and accepted the project report for formal detailed review under the *EA Act*. NGR was notified of this acceptance in a letter from the acting project committee chair, dated August 3, 1999. The required additional copies of the supplemental information were received at the EAO by August 6, 1999.

Copies of the project report were sent to provincial, federal and local governments, as well as First Nations. The project report was placed on the project registry, and was also

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made available at the satellite repositories in Kamloops, Lillooet, Pemberton, Squamish, Whistler and Vancouver. All of Volume 2 of the project report, and most of Volume 1, was posted on the EAO's website.

In accordance with section 16 of the *EA Act*, a review period was established during which time the public was invited to provide comments to the EAO on the project report. The review period was set at the maximum allowable period within the legislated range (60 days), commencing on August 13, 1999, and concluding on October 12, 1999.

On November 22, 1999, some six weeks after the closing of the public comment period, the EAO received late review comments from the Society Promoting Environmental Conservation (SPEC) and McCrory Wildlife Services Inc. The EAO decided to accept these late briefs and refer them to the project committee for consideration, after first confirming, as a matter of procedural fairness, that NGR would not object to this action. As provided for in section 18 of the *EA Act*, NGR was invited to provide comment on the late submissions.

Following the close of the public comment period on the project report, the *Time Limits Regulation* allowed the Executive Director of the EAO 70 days (until December 21, 1999) to refer the application and the project committee's recommendations to the Minister of Environment, Lands and Parks and the Minister of Employment and Investment for a certification decision. In this case, it was necessary to obtain three timeline extensions from the Minister of Environment, Lands and Parks:

- the first, for 101 days (until March 31, 2000), to allow time for completion of the First Nations study program per the October 5, 1999 agreement with the St'at'imc;
- the second, for a further 47 days (until May 17, 2000), to allow time to review the First Nations studies, which were submitted on March 28, 2000, and also to complete the assessment of the potential cumulative effects of the project on grizzly bear populations and habitat; and
- the third, for 44 days (until June 30, 2000), to allow time for the project committee to provide a written response to the St'at'imc Bands with respect to their studies, and also to complete the assessment of the potential cumulative effects of the project on grizzly bear populations and habitat.

This step was completed on June 30, 2000 with the referral of this report to the Minister of Environment, Lands and Parks and the Minister of Employment and Investment for a certification decision. This report documents the course of the EA review of the Melvin Creek/Cayoosh mountain resort project and presents the Melvin Creek/Cayoosh project committee's recommendations to the Executive Director (with reasons) with respect to this referral.

3.4.5 EA vs. POST-EA OR NON-EA INFORMATION REQUIREMENTS

EA vs. post-EA issues - Some issues identified during the review of this project did not raise strategic-level concerns which required detailed attention during the EA process itself. For other issues, while detailed strategic-level EA consideration was warranted, the finalising of issue management details can be undertaken at the post-EA stage, if the project is granted an EA certificate. The project committee has concentrated its review focus on those issues and aspects of issues which raise strategic-level questions about whether or not the project overall, or individual project components, are feasible, or could potentially lead to unacceptable adverse impacts which cannot be prevented or sufficiently mitigated. The project committee has addressed issues in enough depth to determine whether or not (1) policy-type issues are resolved, and (2) technical issues can be managed effectively by proven affordable means. Where issues are deemed resolved for EA review purposes, further more detailed technical information may be required nonetheless to complete both statutory and non-statutory obligations at the post-EA stage, including permit applications, mitigation/compensation plans and monitoring plans and/or data.

Most identified issues were clearly either EA or post-EA in nature. In evaluating policy and technical issues, the project committee relied heavily on the advice of technical experts from the organisations with expertise and/or mandate to consider such issues.

Most EA-level issues are relevant in some way to determining the sustainability of either the project itself or the environmental, economic, social, cultural, heritage and/or health setting in which the project would be placed, if built. Questions which typically help project committees to determine whether or not issues are of a strategic-level EA nature include the following:

- Is the issue relevant to whether or not a particular feature or component of the project, as proposed, is technically feasible or economically viable – this question is relevant to whether or not the project itself (or some component of it) is sustainable over the long-term?
- Is there a concern that a particular component or feature of the project, as proposed, may not comply with existing laws regulations and/or policies – this question is relevant to whether or not the project (or some component of it) is legally sustainable, or makes it more difficult or impossible for impacted government policy expectations to be realised?
- Is there a concern that the project, or a particular component or feature of the project, as proposed, may result in adverse residual effects which, even taking into account available mitigation/compensation options, would not be acceptable – this question is relevant to whether or not the setting in which the project would be placed (environmental, economic, social, cultural, etc.) would be sustainable, given the project's potential effects?

- Is the issue relevant to establishing the magnitude and extent of the project's potential impacts for the purposes of the EA certification decision— again, this question is relevant to whether or not the setting in which the project would be placed (environmental, economic, social, cultural, etc.) would be sustainable, given the project's potential effects?
- Does the issue have any other significant bearing on whether or not a certificate can be issued?

Where the answer to any of these questions is affirmative, the project committee has usually decided to address the issue prior to the EA certification decision, at least in enough detail to reach a reliable conclusion on whether or not it is resolvable. One factor which the project committee has taken into account is whether or not the issue is subject to ongoing regulation and monitoring by other regulatory procedures, since this may influence the extent to which attention needs to be given to an issue during the EA review.

EA vs. non-EA issues - As noted in Appendix B to the October 1997 project report specifications, in deciding which issues were addressed during the EA review (i.e. EA-level issues), the project committee has been guided by the following policy principles:

- Issues should only be considered in the EA process where they are relevant to whether or not the project is in the public interest and should proceed.
- The EA process, as a project-specific review mechanism, is not the appropriate forum for modifying existing government policy expectations or creating new operational requirements for developments which are under review. Thus, requirements for NGR to perform studies or to undertake project redesign were determined with reference to existing government policy expectations, as applied more generally to developments (whether or not subject to the EA process).
- Reviews are conducted within the context of the prevailing land use planning regime (the land use policy environment for a project is simply one element of the broader government policy context for the review). Project committees are not expected either to anticipate future changes in land use designations or to suspend project review activity while land use planning is underway.

In some cases, the committee has had to decide whether issues are within or beyond the scope of the EA process, and in other cases, whether the impact management responsibility rests with NGR, government or some other party.

3.5 NEXT STEPS IN EA PROCESS

3.5.1 DECISION BY MINISTERS

On receipt of the project committee's report and recommendations, the next step is for the two ministers to make their certification decision. Their decision options consist of a choice between issuing a project approval certificate to NGR (with any necessary conditions), refusing to issue a certificate, or referring the project to the Environmental Assessment Board for a public hearing (a third stage of EA review). The project committee recommendations contained in this report are advisory, and are not binding on the two ministers.

A project approval certificate, if issued by the two ministers, would authorise the project to proceed, subject to any development restrictions or conditions which may be imposed by the ministers, usually on the advice of the project committee. If the ministers refuse to issue a certificate, the project will not proceed. If the ministers opt for a public hearing by the EA Board, the next step would be for the ministers to issue draft public hearing terms of reference for public review and comment.

3.5.2 CEAA CONCLUSION

CEAA decision - Once the screening-level assessment is completed, the RA must determine whether or not to take the necessary action to enable the project to proceed - in this case, to issue a NWP approval. However, the RA must not take any action that enables the project to proceed, if the project, taking into account mitigation measures, would be likely to cause significant adverse environmental effects.

After taking into consideration the screening report and any public comments on that report, the RA may ask the federal Minister of the Environment to refer the project to either mediation or a panel review where:

- it is uncertain whether or not the project is likely to cause significant adverse environmental effects;
- the project is likely to cause significant adverse environmental effects and these effects may be justified in the circumstances; or
- public concern warrants it.

Permits, licenses and other approvals - Permit issuance to construct and operate the project cannot take place until after a favourable CEAA conclusion has been reached (per section 11(2) of the CEAA).

Review of future proposals to modify the project - Future project modifications may be subject to CEAA (per section 24) if they entail the exercise, by a federal authority, of any of the four duties, powers or functions listed in section 2.2.1.

**INFORMATION DISTRIBUTION
AND CONSULTATION**

CHAPTER 4.0

4.0 INFORMATION DISTRIBUTION AND CONSULTATION

4.1 PUBLIC PARTICIPATION

4.1.1 BACKGROUND TO REQUIREMENTS

Under section 14 of the *EA Act*, the proponent of a reviewable project, as part of the EA process, is required to distribute information about the project to the public and First Nations. For information on First Nations consultation, see section 4.2 – the remainder of section 4.1 focuses on non-Aboriginal information distribution and consultations.

Once a proponent's initial EA application has been filed and accepted for formal detailed review by the EAO, the project committee is required to review and approve the proponent's proposals for further public involvement, including proposals for notification, access to information and consultation. The purpose of project committee review and sign-off of the public consultation program is to ensure that measures to achieve adequate information distribution are carried out effectively. In the case of a two-stage review, the project committee makes a formal written assessment of the proponent's information distribution proposals at both the application review stage and the project report review stage, and may require a proponent to undertake additional measures to those which it has proposed. Proponents are typically expected to advertise the availability of applications and project reports in newspapers, as well as to consult with the general public and other specified persons and/or organisations.

Where DFO, as RA, is of the opinion that public participation in the screening of a project is appropriate, the RA will provide the public with an opportunity to review and comment on the screening report and on any record filed in the public registry. Any comments received must be taken into consideration in reaching the CEAA conclusion.

Application - NGR's application included documentation describing its pre-application information distribution and consultation activities, as well as an outline of further information distribution and consultation measures proposed for the remainder of the application review stage. The EAO, on behalf of the project committee, provided NGR with a written assessment of this documentation under section 14 of the *EA Act* on January 17, 1997. This assessment noted that the project committee generally agreed with the proposed public consultation measures presented in NGR's application, but stipulated that:

- open houses and public meetings be advertised in additional newspapers; and
- they take place in early February in Whistler, Pemberton and Lillooet.

Project report - In section A.8 of the October 7, 1997, project report specifications, NGR was required to provide specific public consultation information for the project report review stage. The EAO, on behalf of the project committee, issued a written assessment of this information under section 14 of the *EA Act* on September 16, 1999. This assessment noted that the project committee generally agreed with the proposed public consultation measures presented in NGR's project report, including the proposed open houses and public meetings. NGR was also asked to meet with representatives of the alpine community in Vancouver (the BC Federation of Mountain Clubs and the Alpine Club of Canada were specifically cited), and to meet any other stakeholder groups which might request a meeting to discuss the project in general, or the project report in particular. Although it was not a mandatory requirement, NGR was also asked to provide as much of the project report as possible in electronic format so that EAO could post it on its website, and thereby make it available to a larger public audience.

The information contained in the remainder of section 4.0 is provided by the project committee to confirm that all information distribution and public consultation requirements of both section 14 of the *EA Act* and the *CEAA* have been satisfied.

4.1.2 ACCESS TO REVIEW DOCUMENTATION

The EAO maintains a central project registry in Victoria for the purpose of facilitating public access to records relating to environmental assessments. To enable the public to more readily access project documentation, satellite repositories have also been established for the review of this project at public libraries in the following locations:

- Kamloops Public Library, at 63 West Victoria St., Kamloops, BC
- Lillooet Area Public Library, at 930 Main St., Lillooet, BC
- Pemberton & District Public Library, at Cottonwood St., Pemberton, BC
- Squamish Public Library, at 37907-2nd Ave., Squamish, BC
- Whistler Public Library, at 4373 Blackcomb Way, Whistler, BC
- Vancouver Public Library, at 350 West Georgia St., Vancouver BC

In addition, to allow for broader public access, all documents placed on the project registry have been listed on the EAO Internet website (<<http://www.eao.gov.bc.ca>>), with the text of several of these documents also posted. Notably, parts or all of the following documentation have been posted on the EAO's website:

- the summary from NGR's late 1996 application;
- the entire text of the project committee's draft and finalized project report specifications;
- the entire text of the project committee's proposals to amend the wildlife resources specifications; and
- all of Volume 2 of NGR's project report, plus some sections of Volume 1 (EAO was unable to obtain electronic versions of other parts of Volume 1).

Finally, NGR organized open houses during the review of both its application (in Whistler, Pemberton and Lillooet) and its project report (in Whistler and Lillooet).

4.1.3 PUBLIC NOTIFICATION

The public notification measures taken during the EA review of the project are summarized below.

The following items have been advertised in local newspapers by either NGR or the EAO:

- the availability of the application, the draft project report specifications and the project report for public review and comment;
- the public comment review deadlines for the application, the draft specifications and the project report;
- the locations of the satellite document repositories; and
- the locations and timing of open houses and public meetings.

Notices were placed in the following newspapers:

- *Bridge River-Lillooet News*;
- *Pemberton Valley News*;
- *Whistler Question/Pique Newsmagazine*;
- *Vancouver Sun*; and
- *Vancouver Province*.

In addition, the EAO placed a notice on the project registry and mailed an open letter to all people on its mailing list in order to provide details regarding the review of:

- NGR's application – December 1996;
- the draft project report specifications – July 1997;
- the proposed amendments to the wildlife resources specifications – April 1998; and
- NGR's project report – August 1999.

Creation of this list was initiated at the outset of the EA review. Initially, it consisted of various public interest groups (e.g. business and environmental groups) and individuals which/who are automatically added to EAO's mailing lists at the outset of every new EA review. The list then grew with the addition of the names of those filing submissions during the review process.

In addition, DFO registered the project on the Federal Environmental Assessment Index, which affords to the public the opportunity to access information.

4.1.4 PUBLIC CONSULTATION

Pre-application public consultations - As discussed in NGR's application and project report, NGR and the provincial government had consulted with members of the public on various occasions prior to the submission of the application to the EA process. Public notifications and consultations date back to May of 1991, when the project was still subject to review under the Commercial Alpine Ski Policy (CASP).

The following points mention some items of pre-application public notification and consultation regarding this project:

- In May 1991, BC Lands (MELP) placed advertisements in the *Vancouver Sun*, *Vancouver Province*, *Lillooet News* and *Whistler Question*, inviting public comment on the Project.
- In June 1991, BC Lands placed proposal call advertisements for commercial alpine ski resort development in these newspapers, as well as in the *Kamloops Daily News* and the *BC Gazette*.
- In February 1992, a public announcement was made that NGR had been awarded the exclusive rights to study the ski potential of the Melvin Creek watershed.
- In March 1993, a presentation was made to the Lillooet Tribal Council at an open meeting, where 250 to 300 people attended.
- In September 1994, a slide presentation was made to approximately 150 people at a public meeting in Lillooet.

In addition, during this period, there was considerable coverage of the proposed project in regional newspapers.

Public consultations under the two EA processes - Since commencement of the project review under the federal and provincial EA statutes in late 1996, public consultation has included the following:

- NGR hosted open houses in local communities;
- the EAO and NGR have held public meetings during the review of both NGR's application (in Lillooet, Whistler and Pemberton) and its project report (in Whistler and Lillooet); and
- NGR and the EAO have participated in specially arranged meetings with identified public interest groups which have a known interest in the project (e.g. organisations which form part of the community of alpine interests based in Vancouver).

More specifically, during the application review stage, project information was discussed and provided to the public as follows:

- February 10, 1997 - Pemberton public information meeting (46 people attended);
- February 11, 1997 - Whistler public information meeting (100+ people attended); and
- February 12, 1997 - Lillooet public information meeting (~110 people attended).

In between review stages, NGR held the following meetings:

- October 26, 1998 - information meeting with approximately 13 members of the BC Federation of Mountain Clubs, Conservation Committee; and
- February 16, 1999 - status report meeting with the Cayoosh Recreation Club, D'Arcy.

During the project report review stage, project information was discussed and provided to the public as follows:

- September 30, 1999 - Whistler open house (~51 people attending) and public information meeting (26 people attending); and
- October 1, 1999 - Lillooet open house (100+ people attending) and public information meeting (80 people attending).

Representatives of the EAO and NGR met with representatives of various interest groups in Vancouver on September 20, 1999, including:

- Federation of Mountain Clubs of BC;
- Federation of BC Naturalists;
- BC Mountaineering Club;
- Alpine Club of Canada; and
- Alpine Club of BC.

The EAO tracked the comments and issues raised by the members of the public attending the open houses and public meetings during the application and project report review stages. These issues are summarized in section 4.1.5 (*Public Feedback*) and further discussed in the context of specific project-related issues in section 6.0 (*Consideration of Potential Effects of Project*).

In addition to the organized public consultation, project-related information has been profiled by the independent media, and this has broadened public awareness of both the project and the EA review. Since 1991, there have been more than 75 newspaper and magazine articles regarding the proposed resort. Media coverage has included local, regional, provincial, national and international publications. There has also been coverage of the project on regional radio and television programs.

4.1.5 PUBLIC FEEDBACK

There have been a total of four formal public comment periods for the EA review of the project, as follows:

- comment on project application – December 12, 1996 to February 25, 1997;
- comment on draft project report specifications – August 11 to September 9, 1997;
- comment on proposed amendments to the finalized wildlife resource specifications – April 14 to April 30, 1998; and

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- comment on project report – August 13 to October 12, 1999 – in order to ensure all issues had been addressed, the EAO also accepted two late public submissions, received on November 22, 1999.

Throughout the four public comment periods, public feedback on the project has been largely positive, especially in local communities in the Whistler-Pemberton-Lillooet corridor. This public support is based primarily on the prospect of increased economic benefits for local communities which have suffered from reductions in other types of resource-based activities, such as forestry. Project benefits anticipated by the public include: new employment opportunities, increased tourism expenditures, diversification of local economies and increased tax revenues. Other expectations noted by members of the public who support the proposed resort include the following: resort development would be preferable to logging (i.e. would have fewer impacts); there would be increased recreation access/opportunities for local residents; and the resort would provide increased stability to local communities.

The level of local support for the project was evidenced by a postcard mail-in campaign launched during the period for public comment on the draft project report specifications. More than 1600 signed form postcards were submitted. The form postcards criticised the lengthiness of the EA review, and urged the provincial government to approve the project without further delay. In addition to the postcards, approximately 146 written submissions indicating support for the project were received during the various public comment periods throughout the review.

During the same public comment periods, at public meetings and through written submissions, a significant number of members of the public expressed concerns with respect to the potential negative impacts of the project. The EAO received approximately 40 written submissions during the four public comment periods raising concerns (or expressing opposition) with respect to the implications of placing a large resort development into a relatively undisturbed backcountry setting. Most of these submissions originated from outside the project area, some from private individuals, but a significant number also from Lower-Mainland-based environmental and alpine recreation groups.

The basis of the public concern or opposition with respect to the project may be categorised into several major themes or issues:

- resort development would compromise wilderness values and/or backcountry recreation opportunities;
- resort development would have severe impacts on wildlife and wildlife habitat - most notably affecting mountain goats and grizzly bears;
- helicopter-based recreation resulting from the resort development would have negative impacts on both wilderness/backcountry recreation and wildlife;
- resort development would negatively impact downstream water quality;
- there is scepticism over project feasibility, due to competition from other ski resort projects under consideration and the current slump in ski industry growth;

- development of the resort would require (or result in) significant government subsidies to develop the access road and construct the necessary improvements to Highway #99;
- resort development would add increased traffic volumes to an already congested Highway #99;
- the impacts of the resort development would be even more significant if assessed cumulatively with those of other developments in a regional context; and
- the project has not received an adequate environmental review.

All of the concerns raised by members of the public have been considered by the project committee during the course of the review, and in developing its recommendations. Specific concerns raised by the public are further documented and responded to in the corresponding issue-based sub-sections of section 6.0 (*Consideration of Potential Effects of Project*).

In some cases, members of the public recommended that the project or the area adjacent to it be subjected to additional or alternative types of review or land use planning. For example, it was suggested that if the project were approved, a multi-party oversight committee should be formed to oversee development. The project committee considered this proposition, but concluded that the regulatory system already in place is adequate to supervise project development. This will include ongoing public review/comment/information exchange, as each project component/phase is considered for detailed permit approvals, and will provide for regular public involvement through the ski area master plan phase and later development permitting. Another suggestion was for valleys adjacent to Melvin Creek in the Cayoosh Range to be afforded some type of land use protection in order to preserve wilderness and backcountry recreation values. Land use planning issues of this type are beyond the scope of an EA review, and are further discussed in section 6.7.2 (*Planning Context for Project Review*). Still another suggestion was that the project should be subject to a formal public hearing, which is one of the decision options for ministers, now that the project committee is submitting its report and recommendations (see section 3.5.1 – *Decision by Ministers*).

4.2 FIRST NATIONS PARTICIPATION

4.2.1 FIRST NATIONS INVOLVEMENT AND CONSULTATION

Reflecting the statutory provisions contained in the *EA Act* and the *CEAA*, First Nations have the opportunity to play an important role in the EA process. Under *CEAA*, "environment" is defined in biophysical terms. However, the definition given for "environmental effects" is broader and includes "...any change that the project may cause in the environment, including any effect of such change on the current use of lands and resources for traditional purposes by aboriginal persons...". It is in this way that the effect of a project-related change in the environment on the current use of lands for traditional purposes is considered in a *CEAA* assessment. The *EA Act* contains provisions which include opportunities for First Nations to participate with government

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agencies on project committees established to review and comment on project documentation, and to make recommendations on project certification. In addition, proponents are required to consult with First Nations.

The Melvin Creek/Cayoosh project lies in the traditional territory claimed by the St'at'imc Nation, which is comprised of eleven Indian Bands. From the outset of the EA review, the EAO has encouraged First Nations to participate in the review process and in its consultation efforts. The remainder of section 4.2.1 presents a brief summary of these efforts.

First Nations were contacted in late 1996 by the EAO in order to set up working relationships with various St'at'imc Bands. Each of the Bands was provided with a description of the EA process, and discussions were held on the project. At that time, discussions also took place about the availability of participant assistant funding, should that be required to enable First Nations to participate in the review process.

In December of 1996, the EAO sent an invitation to each of the eleven First Nations, inviting them to sit as members of the project committee. Several meetings were held with In-SHUCK-ch/N'Quat'qua regarding their participation, and they agreed to attend project committee meetings. Other First Nations chose not to participate at that time, and most of the eleven First Nations have not participated in the review as project committee members for the duration of the project review. The Lillooet Tribal Council, to which some of the First Nations belonged, maintained early in the review process that the project site was located in St'at'imc Nation territory, and that they would only be involved in project review on the basis of a government-to-government relationship. Accordingly, they requested meetings with provincial ministers to establish such a relationship by way of a protocol agreement that would be focused on development and economic opportunities within the claimed traditional territory. On July 22, 1997, Chief Redan met with two Ministers to express concerns with respect to the resort project's potential for impacts on wildlife, fish and adjacent areas, and to press for issues of Aboriginal rights and title to be addressed in nation-to-nation discussions.

Meanwhile, the EAO continued to meet with willing First Nations to discuss participation in the review and project-related matters. During the application review stage, three First Nations organisations - the N'Quat'qua (Anderson Lake Indian Band), the In-SHUCK-ch/N'Quat'qua Council, and the Lillooet Tribal Council - participated at various times, either officially or informally, in meetings of the project committee. For example, on June 26, 1997, representatives of In-SHUCK-ch/N'Quat'qua and EAO met to discuss First Nations views, such as the need for a traditional use study, the need to avoid potential infringement of aboriginal rights, the need to address the impacts of increased traffic on people and wildlife, and queries about how garbage and sewage will be treated.

Late in the application review stage, the Lillooet Tribal Council agreed to provide comments on the project application. In mid-1997, the EAO provided them with funding to hire a technical consultant to review the application and prepare comments for First Nations consideration. These comments were presented to the project committee by

Chief Perry Redan, representing the Lillooet Tribal Council, on September 24, 1997. Chief Redan indicated that the input was not complete, and that it was being provided without prejudice to aboriginal rights. This advice formed the basis for the information requirements set out in the October 7, 1999 project report specifications (see Volume 1, section G.1).

Following finalisation of the specifications, NGR attempted to develop a working relationship with the St'at'imc which would allow NGR to complete the First Nations study requirements stipulated in the specifications, but was unsuccessful in doing so.

In August 1998, the EAO again met with several First Nations and the Lillooet Tribal Council. The purpose of these meetings was to discuss potential impacts of the project, as well as other concerns of First Nations. The N'Quat'qua (Anderson Lake) First Nation identified impacts on traditional activities such as hunting, and were also concerned about impacts on valleys and watersheds adjacent to Melvin Creek. At a meeting on August 28, 1998, the concerns of the Mount Currie First Nation were mainly focused on Highway #99 issues. It cited concern over the safety of its community members in the face of an anticipated increase in traffic volumes through their community, and also over a tenure dispute with MoTH pertaining to Highway #99. It was also interested in the potential economic benefits of the project, and the opportunity to enhance the Band's social and economic base. Follow-up meetings were held in October 1998 with both of these First Nations, as well as with the Cayoose Creek First Nation and the Lillooet Tribal Council.

As a result of these discussions, it was agreed, at a meeting between EAO, St'at'imc and NGR representatives in late November 1998, that the EAO (rather than NGR) would take the lead in working with St'at'imc to set up a study program. St'at'imc Chiefs and the EAO began negotiations with respect to the studies which needed to be undertaken to identify project impacts on First Nation interests. More specifically, terms of reference and budgets were agreed for cultural heritage, socio-economic and transportation studies (to be conducted by Creekside Resources Inc. of the Mount Currie Band on behalf of the St'at'imc Chiefs). It was not until October 1999 that these negotiations were concluded and the studies begun. The St'at'imc Chiefs, while agreeing to participate in the study program, again declined to participate in future proceedings of the Melvin Creek/Cayoosh project committee. They agreed to provide the studies to the EAO at least three weeks prior to the date at which recommendations were to be made to ministers.

The St'at'imc studies were filed with the EAO, per the funding agreement between EAO and Creekside, on March 28, 2000, with advice from St'at'imc legal counsel that the studies should be considered as drafts, since they had not been approved for release by the St'at'imc Chiefs, and that therefore, any reliance on them is at government's own risk. The reports were immediately circulated to federal, provincial and local government agencies, and also to NGR. In keeping with the EAO's agreement with the St'at'imc Chiefs, the studies were circulated to project committee members on a confidential, need-to-know basis for their review.

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Subsequently, the EAO received an April 7, 2000 letter from Chief Mike Leach, representing St'at'imc interests. He indicated that two of the studies, and part of a third, had now been approved by St'at'imc Chiefs, and were considered final. Other studies were considered to be incomplete drafts which require further work. In that letter, the St'at'imc requested funds to complete the studies which it deemed incomplete. EAO responded to this request in an April 19, 2000 letter by indicating that it had already provided considerable funding to the St'at'imc to undertake the necessary studies, and was not prepared to provide further funding. In the same letter, EAO reiterated the offer for government officials to meet with St'at'imc to discuss the issues raised in the reports. In the meantime, references to the draft studies in this project committee recommendations report acknowledge that they have not been approved by St'at'imc Chiefs, and are being used at government's own risk. Also on April 19, 2000, DFO wrote to St'at'imc Chiefs, acknowledging receipt of the Creekside reports and encouraging continued St'at'imc input, and reiterated the latter point in a follow-up (May 16, 2000) letter. On April 20, 2000, the Aboriginal Economics Initiatives Office (AEIO), which has been mandated by the province to take the lead in bilateral discussions with St'at'imc that the St'at'imc Chiefs had requested and agreed to on October 5, 1999, also wrote to St'at'imc. AEIO offered resources to support bilateral discussions, including further focus on how St'at'imc might participate in the project's economic benefits.

In a April 28, 2000 letter, Creekside notified other St'at'imc Chiefs of the decision of the Lil'wat (Mount Currie) Band Chief and Council to "...mandate Creekside Resources Inc. to continue negotiating independently and to protect the interests of the Lil'wat Nation in the Cayoosh Creek Ski Resort proposal, while developing a community informed decision making process based on compiled studies to date..."

On June 9, 2000, the project committee circulated a June 9, 2000 report to all St'at'imc Chiefs, entitled: *Responses to Issues Raised in St'at'imc Studies Submitted on March 28, 2000 by Creekside Resources Inc.* The response report was created by compiling the draft First Nations sections for each issue documented in the draft project committee recommendations report. The status of each issue, as it stood on June 9, 2000, was indicated.

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, under cover of a May 17, 2000 letter which indicated that the Creekside cultural heritage report was missing some key information. The new report, dated May 9, 2000, and entitled *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*, was prepared by Dorothy Kennedy and Randy Bouchard of the BC Indian Language Project, and is labelled a 'draft final report'.

On the same date, Chief Garry John of the St'at'imc Chiefs Council, issued a news release, announcing that, at a meeting of St'at'imc people on June 11, 2000, "...clear direction was provided to reject the ski proposal in the Melvin Creek drainage as put forth by NGR Resort Consultants Inc..."

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On June 16, 2000, EAO agreed to provide the Mount Currie First Nation with additional funds to respond to the project committee's June 9, 2000 response document and its draft project committee recommendations report. Three drafts of the latter had already been provided to all St'at'imc Bands, the first in March 2000, and the fourth and final draft, which was being prepared for project committee sign-off, was to be circulated towards the end of June 2000. The Mount Currie First Nation was aware that only comments provided prior to the June 30, 2000 time limit for referral of the project to ministers for an EA certification decision could be addressed by the project committee in its report. In late June, the Mount Currie First Nation indicated that it would not be able to file comments by June 30, 2000, and, as a consequence, has requested of ministers that the EA certification decision be delayed while its concerns are addressed. When Mount Currie First Nation comments on the project committee's documentation are submitted, this information will be circulated by EAO to members of the project committee for their consideration and comment, and also to ministers, whether submitted before or after an EA certification decision on the project.

Throughout the review of this project, and irrespective of the position of the St'at'imc Bands on participating directly in the work of the Melvin Creek/Cayoosh project committee, the EAO has provided all St'at'imc First Nations with project documentation and other relevant information generated for the review process, including the documentation circulated to, and by, the project committee.

In addition to the EAO's discussions and consultations (recognising that First Nations may not regard the EAO's consultations as being adequate to fulfil what they may understand government's obligations to be), NGR has also engaged in discussions and consultations with First Nations over several years. These have been documented in NGR's application and project report. Aside from these discussions, specific studies were commissioned by NGR in order to assess the potential impacts of the project on First Nation interests. These include, among others, studies of archaeological, wildlife, socio-economic, transportation and cultural heritage issues.

FIRST NATIONS FEEDBACK

Various First Nations issues and concerns have been raised in discussions between St'at'imc representatives and Bands, NGR and government officials during the course of this review. In addition, a very important source of feedback on the project from the St'at'imc Nations is the series of four reports submitted to the EAO on March 28, 2000. These are listed in section 6.6.1. While many issues are project-related, the St'at'imc have also raised other broader issues which are beyond the scope and mandate of the EA process itself.

In summary, First Nations have raised issues in the following categories:

Technical Infrastructural Issues

- concerns over access road design standards;
- impacts of runoff contaminated by road salts and other road de-icing chemicals;
- runoff, erosion and siltation associated with the access road;
- accuracy of water demand calculations;
- impacts of water supply on Melvin system, including drawing down Melvin Lake
- feasibility and impacts of increasing storage in Second Lake and downstream in Melvin Creek;
- preference for use of groundwater;
- impacts of water withdrawal on Haylmore/Twin Lakes system;
- impacts of impounding Second Lake;
- adequacy of power supply for sewage disposal system;
- consequences of failure of the liquid waste ground disposal system;
- identification of special wastes, and transportation/disposal proposals;
- safety on road tankers carrying liquefied natural gas (LNG), adequacy of LNG supply.

Environmental Issues

- inadequate MELP wildlife review – lack of strategic process;
- inadequate wildlife studies, lack of use of Terrestrial Ecosystem Mapping (TEM), timing of studies (pre- vs. post-EA), need for GPS studies;
- black bear, cougar, lynx and wolverine impact concerns;
- Spotted Owl and Harlequin Duck concerns;
- mountain goat and grizzly bear impact concerns;
- increased potential wolf predation on goats;
- questions regarding the third-party goat review;
- need to address grizzly bear recovery objectives;
- mule deer impacts;
- wetland and riparian impacts;
- problem wildlife management;
- comparing resort impacts to National Parks experience;
- comparing resort impacts to logging impacts;
- impacts outside the Melvin Creek drainage, need for cumulative effects perspective;
- concerns associated with helicopter skiing;
- concerns with increased traffic-related wildlife impacts along Highway #99;
- need for wildlife impact risk analysis;
- increased recreational access in Melvin Creek and surrounding drainages;
- need to meet best practices to address water quality impacts of the proposed golf course.

Social, Economic and Health Issues

- adequate delivery of health and ambulance services;
- policing and law enforcement responsibilities of Tribal Police;
- First Nations employee housing – availability and financing, need for housing program and trust fund;
- First Nations day-care needs;
- implications for current St'at'imc community development plans and strategies;
- resort governance structure;
- queries about the job creation estimates;
- availability of, and constraints to, employment and economic development opportunities;
- resort employment opportunities and training for First Nations people – need for extensive skills training;
- applicability of agreements between First Nations and NGR to third-party developers at the resort;
- impacts of resort traffic on Mount Currie and Cayoose Creek communities (safety, constraints placed on non-vehicular traffic);
- need for Highway #99 upgrading and timing of improvements.

Cultural and Heritage Issues

- inability to use cultural heritage study to address aboriginal rights and title issues;
- incomplete ethnographic interviews on traditional use of area;
- impacts on traditional use of Melvin Creek for deer hunting;
- need for further archaeological investigations, based on upgraded predictive model;
- need to recognise trails, hunting blinds, CMTs, etc. as archaeological sites;
- need to return artifacts from site EdRn 1 to St'at'imc;
- impacts on traditional hunting and gathering activities from increased recreational access in Melvin Creek and surrounding drainages;
- concern for winter recreation impacts on deer hunting (e.g. from cross-country skiing, snow-shoeing and snowmobiling);
- more backcountry recreation tenures in surrounding areas;
- confiscation of a trapline some decades ago;
- need for further ethnobotanical/ethnozoological investigation;
- mitigation options linked to St'at'imc control of resource management in the area.

These issues have been considered by the project committee, to the extent that they are within the scope of the EA process. The issues are documented more fully in the relevant issue sections of this report, together with the project committee's response to the issue. Under the terms of study agreement with St'at'imc, NGR was also provided with copies of the St'at'imc reports, and NGR's responses to First Nations issues are also documented in relevant sections of this report.



**SCOPE OF REVIEW AND
PROJECT DESCRIPTION**

CHAPTER 5.0



5.0 SCOPE OF REVIEW AND PROJECT DESCRIPTION

5.1 SCOPE OF EA REVIEW OF PROJECT

Reviewable Project Components (5.1)

For the purposes of the joint federal/provincial EA process, the Melvin Creek/Cayoosh resort project is deemed to consist of the construction and operation of all on-site and off-site project facilities which are installed exclusively or primarily for the benefit of this project, and associated activities related to (or primarily attributable to) resort operations, including the use of physical infrastructure built for the project. The following more specific itemisation is updated from that presented in Appendix A, section A.1 of the project report specifications.

On-site Facilities

Definition of the project is deemed to include the construction and operation of the following at the resort site:

- ski runs, including circulation corridors;
- ski lift system;
- ski run maintenance facilities;
- rescue facilities;
- ski lodge;
- ski village;
- hiking trails;
- golf course;
- on-site road system;
- on-site power supply facilities (LNG-fired power generation is proposed), and associated distribution system (i.e. transmission lines);
- hotels, condominiums, townhouses, chalets, single family residential lots;
- water supply systems for all on-site components;
- solid waste disposal for all on-site components, including on-site and off-site disposal facilities and systems; and
- liquid waste and stormwater disposal for all on-site components, including on-site (and if necessary, off-site) disposal facilities and systems.

Off-site Physical Infrastructure

Definition of the project is deemed to include the construction and operation of the following off-site physical infrastructure:

- access road from Duffey Lake Road to the proposed resort*;
- bridges along the access road*;
- related facilities such as gravel/borrow pits and maintenance yards (if any) *; and
- off-site power supply facilities, if any (i.e. transmission line hook-up to the integrated grid).

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[⁺Note - The project committee, in conducting its review, has recognised that the responsibility for locating, designing, constructing and operating the access road is likely to be shared with the local timber rights holder, Ainsworth Lumber Co. Ltd.]

On-site Activities and Services and Off-site Activities
Definition of the project is deemed to include:

- activities based at, or originating from, the resort at each season⁺⁺; and
- on-site services required to operate the resort community.

[⁺⁺Note - NGR has stressed that off-site heli-skiing, heli-hiking and snowmobiling are not proposed activities for this project.]

A Note on Permanent Project Closure and Decommissioning (5.1)

In accordance with section 53(2) of the *Reviewable Projects Regulation*, it should be noted that the EA process does not require the proponents of reviewable tourist destination resorts to develop (and assess the impacts of) plans for the permanent long-term dismantling or abandonment phases of their projects. The rationale for this stipulation is that the intent of resort proponents is normally to install a tourist facility with an indefinite multi-year life, and with operations lasting well into the foreseeable future.

It should be noted that, in accordance with section 15(3) of the CEAA, an EA may be required for the decommissioning or abandonment of the project.

Reviewable Potential Effects of the Project (5.1)

The scope of the EA review of the Melvin Creek/Cayoosh project, the reviewable project components of which are defined above, has entailed assessing of the project's potentially significant environmental, social, economic, cultural, heritage and health effects, both positive and negative, as provided for in the *EA Act*. The review has included consideration of measures proposed to avoid, mitigate or compensate for identified potential adverse effects, and also measures proposed to enhance project-related benefits.

On-site and Off-site Environmental, Resource Use and Land Use Considerations

The EA review has incorporated consideration of relevant issues with respect to project-related use of, and potential positive and negative impacts on, the natural environment and associated resources and land uses found at the project development site (including off-site infrastructure sites), and also in the zone of potential impact surrounding the sites of physical on-site facilities and off-site infrastructure. More specifically, to the extent, if any, that they may be affected, the EA review has examined the potential implications of project development for on-site and adjacent:

- water quantity and quality;
- air quality;
- fisheries resources;
- terrestrial wildlife resources;

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- forest resources;
- mineral resources;
- outdoor recreational use and opportunities;
- existing resource tenure-holders;
- other commercial and non-commercial users of resources in the area (including the general public);
- cumulative environmental effects; and
- environmental effects of accidents and malfunctions.

[Note - the project committee is satisfied that no agricultural resources will be affected by the proposed development.]

Local and Regional Socio-economic and Community Implications

The EA review has incorporated consideration of relevant issues with respect to the project's:

- viability and marketability;
- potential employment and income effects;
- potential economic development effects, both positive and negative;
- specifically, the potential effects on tourism and related businesses in the region of development;
- potential implications for accommodation availability in the local area; and
- potential demographic and social implications for local communities (e.g. community stability and lifestyle issues).

Implications for Existing Local and Regional Infrastructure and Service Delivery

The EA review has included consideration of relevant issues with respect to project-related use of, and potential impacts on, infrastructure and services provided in the surrounding region, both positive and negative, including, more specifically:

- the creation of, or upgrading of, local and regional infrastructure and service systems for the project; and
- the incremental utilisation of, or other impact on, the following existing infrastructure and service systems, where directly attributable to project development:
 - * existing local/regional transportation infrastructure, to be used to move employees, visitors or goods in connection with resort operations, including public highways; and
 - * existing local and provincial service delivery mechanisms, where these may be significantly affected (e.g. health, emergency management and local government services).

First Nations Issues

The EA review has included consideration of relevant issues with respect to potential positive and negative project-related impacts on First Nations communities and interests in the vicinity of the project, and more specifically:

- potential impacts on traditional and cultural resources and use of the area by First Nations (including archaeological resources); and
- the social and economic implications, including potential negative impacts and possible off-setting economic and social opportunities, associated with project development.

Resort Governance

The EA review has included consideration of resort governance issues which are relevant to the assessment of the potential effects of the project, and to options for managing these effects (see section 5.9 - *Resort Governance*).

[**Note** - This project, if it proceeds, would be governed in a similar fashion to other ski resorts in the province. Typically, ski resorts fall under either municipal or regional district local governance. The local government will establish an Official Community Plan which supports the development concept approved in the CASP ski area master plan and master development agreement.]

5.2 PROPONENT

The proponent of the Melvin Creek/Cayoosh mountain resort project is NGR Resort Consultants Inc. (NGR), a company owned by Alan E. Raine and Nancy C. Raine, who are the directors and only shareholders. The company is incorporated in BC, with the incorporation number #0351593. It is active in resort development and investments, marketing and promotional activities, as well as consultation assignments.

5.3 DEVELOPMENT CONCEPT

According to NGR, the proposed Melvin Creek/Cayoosh project is intended to be an international destination ski resort with complementary summer attractions. When completed, the resort would have 13 ski lifts, able to cater to approximately 11,550 skiers per day. The resort would also offer cross-country skiing, snowshoeing and outdoor ice skating facilities in the winter. The summer attractions of the resort would comprise scenic beauty, sightseeing, wildlife viewing, nature interpretation, hiking, horseback riding and mountain biking. The resort village would offer the following amenities: swimming facilities, tennis courts, 9-hole golf course, spa, conference/entertainment facility, shopping and restaurants. The resort is scheduled for build-out over approximately 14 to 15 years, in four separate phases.

5.4 PROJECT LOCATION

The proposed resort is located approximately 225 km north of Vancouver, B.C. 105 km northeast of Whistler, and approximately 50 km southwest of Lillooet. Access to the proposed resort is via Highway #99 (Duffey Lake Road). Approximately 10 km east of Duffey Lake, a new two-lane 10.97 km public highway would climb from Highway #99 into the Melvin Creek valley to provide road access to and from the resort.

5.5 PROJECT GEOGRAPHY

The resort site is located on the interior side of the Coast Range, in the transition zone between the mild, wet coastal climate and the cooler, drier interior climate. NGR reports that this location will provide quality snow conditions, considerably more sunshine than in coastal areas and, with a base elevation of more than 1500 meters, a winter season with very few days of rain, wet snow or fog. The Melvin Creek valley is a hanging valley which rises gently from 1500 m to 1675 m over 3 km. The surrounding peaks and ridges rise to more than 2400 m, and protect the valley from the prevailing winds. The two highest peaks are over 2600 m.

5.6 PROJECT LAYOUT AND INFRASTRUCTURE

5.6.1 VILLAGE SITES

Two villages are proposed for the resort. An upper village would be located at the 1,700 m elevation and a lower village at 1,550 m. The upper village would have 13.8 ha of commercial core, surrounded by 36.1 ha of residential land, while the lower village would encompass 2.4 ha, with 16.4 ha of adjacent residential lands.

In total, the proposed resort would have 3,077 accommodation units, containing 14,186 bed units (BUs) with approximately 10,193 BUs for destination visitors and 2,860 BUs for employees on site. These would consist of a combination of condominiums, townhouses, pensions, single-family chalets, lodges and hotel rooms. Commercial sites would be located in both villages. Additional accommodation, employee housing and commercial opportunities would also exist in nearby communities such as Lillooet and Pemberton.

The resort development would require urban infrastructure for the village sites, including: an access road, a water supply system, liquid waste system, stormwater/drainage system, solid waste collection and storage facilities, and an energy generation system.

5.6.2 ACCESS ROAD

A significant component of the project would be the construction of an 11-km, two-laned, paved public highway, rising approximately 700 m from Highway #99 to the upper village site at a maximum grade of 11%. Projected annual vehicle traffic counts would begin at 20,000 in the first year, rising to 82,000 in year 10 or build-out. The design speed of the road would nominally be 70 km/h, reduced to 25 km/h on the switchbacks in the lower part of the Melvin Creek valley.

Prior to construction of this road for the resort, Ainsworth Lumber Co. Ltd. may construct a temporary access road into the village site for timber harvesting activities along roughly the same alignment as the permanent resort access road. Whether the temporary logging road is upgraded for resort access or NGR constructs the access road from the outset, MoTH will eventually assume maintenance, snow removal and avalanche protection responsibilities for the public highway. MoTH is required to do so by law, once subdivision of private land commences at the resort.

5.6.3 WATER SYSTEM

The potable water system for the resort would utilize Melvin Lake as the primary supply. Melvin Lake offers a water supply of good quality which meets the Canadian Drinking Water Quality guidelines. Water would be stored in Melvin Lake during freshet in order to meet the resort's water demands during the winter. To meet the projected 350,000 m³ annual water demand at build-out without impacting downstream licensees, storage in Second Lake would be required. Second Lake has more capacity, and is of a similar quality. With storage, these sources are capable of meeting the resort water demands at build-out in a 1-in-25 low-flow year without impacting downstream water licensees. There is also some potential to develop and utilize groundwater sources for potable water in the early years of the resort development.

Potable water will be diverted, used, collected, treated and returned to the groundwater scheme. Stored water in Melvin Lake and Second Lake would be drawn down during the winter months, and replenished during the spring runoff, which results in the Melvin Creek flows being slightly higher during winter after the development is completed. Hence, NGR estimates that this diversion of water for the resort's use will not impact the downstream water license users.

It is proposed that water treatment for the potable system will include a disinfection process, which may use mixed oxidants (MIOX), ultraviolet light or ozone as the primary disinfectant. Chlorine use is envisioned as the secondary disinfectant. Chloramine will not be used. Filtration will be considered for turbidity removal, and as a second barrier to pathogens.

NGR has committed that all buildings will use modern water conservation techniques and fire sprinkler systems, and will be assessed volume-based water tariffs. NGR is also committed to an ongoing public education system to encourage water conservation.

A small snowmaking system is proposed to utilize 25,000 m³ of water per year from Upper Twin Lake. The timing of this diversion is late fall of each year, well after irrigation use on lower Haylmore Creek has ceased for the season.

Second Lake would be the source of irrigation water required for the nine-hole golf course proposed for years 8 to 10 of the project development. This would require an estimated 40,000 m³ per year. Second Lake could also supply 20,000 m³ per year to a snowmaking system on the lower village slopes (Lift #3). A low-level dam would provide the necessary quantity for these diversions, by storing water during freshet when unlicensed water is available.

SLRD will own and operate the potable water system. SLRD is satisfied that NGR has acknowledged and accepted that the water supply system would be built and operated as a municipal system from the outset.

5.6.4 WASTEWATER SYSTEM

A conventional wastewater collection system is proposed to service commercial and residential structures at the resort. Advanced secondary treatment, and tertiary treatment depending on specific requirements at the permitting stage, will be required. The maximum wastewater discharge rate is estimated to be 3,490 m³/day at build-out.

The proposed method for disposal of treated wastewater is by a rapid infiltration ground discharge system. The preferred location for such a disposal system is near the resort village. However, lack of access for an excavation machine has prohibited detailed investigation of a site. An alternate site near the confluence of Melvin and Cayoosh Creeks has been investigated. According to NGR, analysis shows that this site is capable of meeting MELP's regulations for a permit. If this alternate site is used, the treatment plant would be located near the resort village, and treated effluent would be transported to the ground disposal site via a pipeline buried under the main access road.

5.6.5 STORMWATER AND DRAINAGE

Soil erosion and flooding are identified as very important issues in the development of the resort. NGR proposes to prepare a detailed Master Drainage Plan before the commencement of construction. Objectives of the Master Drainage Plan would be to minimize the impact of the development on the environment.

The objectives would be met by:

- applying erosion and sediment control measures during and after construction;
- using stormwater management measures, including settlement ponds where appropriate;
- using leave areas where possible around wetlands and riparian zones;
- using environmental construction management techniques which are outlined in NGR's Environmental Management Plan, including employing an environmental monitor;
- monitoring the water quality in Melvin Creek prior to any logging activities and resort construction, and then monitoring regularly during construction and operational years; and
- using several government guideline documents to guide development in an environmentally appropriate manner.

5.6.6 SOLID WASTE MANAGEMENT

The Lillooet Landfill has been identified by the SLRD as the disposal location for municipal solid waste from the resort. It is anticipated that an animal-proof transfer station would be required near the resort. Similarly, all public refuse containers would be bear-proof and animal-proof.

The resort would implement a waste reduction program and provide a plan for dealing with any dangerous goods and special wastes. This plan would be prepared before construction of the resort.

5.6.7 ENERGY SYSTEMS

The resort development would require 9.4 MW of electricity for peak demand at build-out. The annual fuel demand would be 325,000 GJ, with an annual electrical demand of 22 GWH. Liquefied natural gas (LNG) would be trucked to the site and used for powering the generating systems and heating buildings. Natural gas would have the lowest impact on the airshed compared to other fossil fuels. Further energy efficiencies would be gained through heat recovery systems from the generators, which would be used for heating public buildings and swimming pools.

5.7 PROJECT SCHEDULING

Issue(s) (5.7)

The main issue was the need for NGR to clarify the relationship between the scheduling envisaged for the on-mountain, base area and off-site infrastructure components of the project.

Content of Application (5.7)

In the Overview section of the application, brief information was provided for the first 10 years of operations, focusing on the scheduling of lift installation, and the growth of skier capacity and skier visits.

Agency Review Comments on Application (5.7)

Through the July 1997 draft specifications, the project committee communicated a need for more integrated scheduling information, relating the various project components in a more digestible manner.

Proponent's Responses to Agency Comments on Application (5.7)

In a September 22, 1997 response, NGR reiterated that forecasting the phasing of the resort is difficult, but that the application did provide enough phasing information to assess environmental impacts.

Project Report Specifications (5.7)

In the finalized specifications, the project committee noted that the Melvin Creek/Cayoosh proposal entails the phased development of a broad array of facilities, including sewage treatment, environmental protection works and commercial, transportation and recreational facilities, and also creates a demand for various services to cater to the needs of the resort's employees and visitors. In the project report, NGR was asked to update the information in the application on the relationship between the scheduling of the overall resort development and the demand for, and provision of, physical infrastructure and service requirements. It was noted that information on the scheduling of these requirements would allow government to better appreciate the staging requirements of the development, and the degree of inter-dependency of the various project components.

Issue Treatment in Proponent's Project Report (5.7)

In Volume 2, Part A of the project report, NGR notes that it is difficult to predict the 10-year development schedule with precision. NGR cites the following factors the variability of which, in its view, could affect scheduling:

- the BC economy and growth in the Pacific Northwest;
- the North American economy and the value of the Canadian dollar;
- the world-wide economy and political stability;
- ski/snowboard rates of growth in North America;
- the BC winter holiday market;

- consumer responses to the Melvin Creek/Cayoosh resort product; and
- other expansion of ski lift capacity in the Squamish to Lillooet corridor.

In the project report, NGR's consultants, Ecosign Mountain Resort Planners, have updated the scheduling presented in the November 1996 application. Four phases are now envisaged for the on-mountain development, and it is projected that it will take more than 15 years to achieve full build-out.

The relationships between the scheduling of the on-mountain, base area and off-site infrastructure components of the project are complex. The project committee, in the specifications, requested a single schedule, providing an up-to-date estimate of the projected scheduling of each main component of the overall development within the 10(+)-year development schedule, identifying any project components for which scheduling is optional or uncertain. The requested scheduling information was to be linked to a single system of phases for the entire project covering on-mountain, base area and infrastructure development. In response, NGR has presented a chart (Volume 2, Table A.1), which covers the first 10 years of operations, and which provides a simplified projection of the timetable for fourteen (14) distinct components of the project.

Agency Review Comments on Project Report (5.7)

No review comments were submitted on the project development schedule information in the project report.

Public Comments on Issue and Project Committee's Position (5.7)

Members of the public provided no specific comments regarding the project development schedule.

First Nations Comments on Issue and Project Committee's Position (5.7)

No specific comments on the project development were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of those reports.

Proponent's Commitments Relevant to Issue (5.7)

NGR made no specific commitments with respect to project development scheduling.

Status of Issue at Time of Referral to Ministers (5.7)

The project committee was satisfied with the information in the project report for the purposes of the EA certification decision. If the project is certified under the *EA Act*, more detailed scheduling information will have to be developed for the ski area master plan under CASP.

The project committee currently understands that, if the project is certified in the Spring of 2000, NGR envisages the following broad scheduling for the various activities leading up to resort operations:

- a. The next step, if the project is certified, is to begin the base area planning exercise in order to finalize the ski area master plan which will form the basis for negotiations with BCAL on a master development agreement under CASP. This more detailed resort planning process is projected to commence in mid-2000, with completion of the plan by December 2000. At that time, the plan would be submitted for review. NGR provisionally anticipates a decision from BCAL on a master development agreement by June 2001.
- b. Concurrently with proceeding with the ski area master plan, NGR will need to assemble a more detailed business plan to raise funding to (i) complete the planning, preliminary engineering, and approval process, and (ii) establish a snowcat operation.
- c. NGR also intends to work to resolve forestry access road issues, and hopes that, in the summer of 2001, it will be in a position to develop access to the site in order to carry out the site-specific engineering that is required prior to any on-site construction work being carried out. According to NGR, this could be scheduled earlier if St'at'imc First Nations issues are resolved in the spring of 2000. If road access could be created in 2000, the snowcat operation (see item d), below) could commence in the winter of 2000/2001.
- d. Once access is available, NGR will make an application through BCAL for a snowcat operation, tentatively scheduled to begin operations in the winter of 2001/2002. Under the existing Investigative Permit, NGR may use snowcats to review weather and snow conditions to refine site-specific lift locations and position ski runs. Any activities beyond the scope of the existing agreement will require a *Land Act* application under the Commercial Recreation Policy, including referral to local and provincial government agencies for comment.
- e. Following the winter of 2001/2002, with approvals in place, NGR would undertake the task of raising the capital required to commence lift and village development.
- f. Actual on-site resort work would not commence before the summer of 2002, and could be delayed one or two more years.
- g. Resort operations would not commence before 2004 at the earliest.

5.8 PROJECT FEASIBILITY

Issue(s) (5.8)

The main issues were to determine at a preliminary level the technical, logistical, marketing and financial feasibility and viability of the project.

Content of Application (5.8)

In its application, NGR presented consultant Ecosign's financial analysis of the project, as a key step in determining its economic feasibility. The analysis estimated the capital costs of Phases One and Two of resort development, formulated some economic parameters for operations, and developed a break-even analysis to estimate the skier visitation required for the operating, cash flow and economic break-even points. In Ecosign's August 1996 Executive Summary of its 1991 report, the following conclusions are presented:

" ...

- 1 *The potential Cayoosh Resort is favourably located just 105 km northeast of Whistler Village with good access on Highway #99.*
- 2 *The physical site characteristics of the Cayoosh study area are good with an abundance of quality downhill ski terrain.*
- 3 *Ecosign estimates that the total potential natural terrain in the Cayoosh Resort area (including neighbouring valleys not proposed for development) can accommodate 27,900 skiers per day. The Ecosign conceptual plan indicates that with lift servicing, 11,550 skiers per day could comfortably use this area at build-out. Cayoosh Resort's terrain balance is skewed towards the upper ability levels in the skier market.*
- 4 *The Cayoosh Resort area appears to have substantial high quality, natural snow resources and this, in combination with the site's elevation, should provide consistent, quality skiing from early November until early May.*
- 5 *An apparent shortage of suitable baseland areas may be a limiting factor in the development of the Cayoosh Resort's mountain potential.*
- 6 *The scenic natural beauty of the study area and its European, alpine ambience will create a unique North American destination ski resort.*
- 7 *The development concept of an intimate resort environment with high quality skiing and resort facilities, based on the latest in ski area planning techniques and equipment, will create a high quality visitor experience.*
- 8 *Ecosign estimates that the initial Phase One, Option Two development, capable of accommodating 4,300 skiers at one time would need to attract approximately 252,475 skier visits to achieve an overall economic break-even point.*

- 9 *The need to create an integrated destination resort in the first phase dictates a relatively large initial development with a Phase One capital cost for mountain facilities estimated at \$27.7 million, and access road financing support through the Provincial Government's Transportation Finance Authority.*
- 10 *The potential baseland development concept calls for a total of 3,737 accommodation units, capable of handling 10,324 visitors and 3,319 employees containing a total of 14,186 bed units..."*

The application also contained NGR's own analysis of the resort's market potential for winter and summer visitors, with information dating from 1991.

Agency Review Comments on Application (5.8)

In comments on the financial and marketing information, BC Lands (then with MELP, now BCAL) noted the Ecosign conclusion that the project is marginally feasible unless the government provides 50% of the funding of the new access road required for the resort. It sought clarification from NGR that the BC Transportation Financing Authority was prepared to provide such funding, and if so, under what conditions.

Proponent's Responses to Agency Comments on Application (5.8)

NGR agreed that the break-even analysis and market analysis were both outdated (1991), attributing this to the slow review process. It proposed to submit updated marketability, financial and technical feasibility information as part of the detailed ski area master plan phase, if the project is approved under the EA Act.

Project Report Specifications (5.8)

The project committee decided that, in its project report, NGR should update the financial and market information and visitor projections for the project, rather than waiting until the post-EA phase.

The project committee also noted that, typically, at this point in the review of a ski resort, if conducted under CASP, an independent review of the mountain terrain, lift layout, infrastructure needs, and base development would be conducted to confirm that the proposal provides for a balanced and feasible ski development. This also entails independent confirmation of the proposed capital costs and services to be provided, and of NGR's market analysis.

In order to complete the EA review of the Melvin Creek/Cayoosh project, the project committee agreed that BC Lands (MELP) and MEI needed to be in a position to verify whether or not the proposed resort is financially viable, given the anticipated on-site (i.e. resort, lifts, village subdivisions) and off-site (i.e. road, utility) development costs, and to analyse the market to determine the expected revenues and break-even point. Thus, the specifications indicated the project committee's intention, through the EAO, to commission an independent expert evaluation as part of the EA review of the project. As under CASP, NGR was considered responsible for providing the financial and market information necessary for the independent assessment. It was recognised that NGR's

application provided considerable information on various aspects of the project, and also provided preliminary estimates of project construction and operating costs.

Independent Feasibility Investigation (5.8)

On June 19, 1998, Brent Harley and Associates Inc. (BHA) were retained by EAO, working with BC Lands and MEI, to review the financial and market information in NGR's application (plus more recent revised data).

A. Overall Conclusions

In its final report, dated March 1, 1999, BHA presented the following major conclusions:

"...Based on the submission by NGR Resort Consultants Inc. it is the opinion of Brent Harley and Associates Inc. that with refinements, the conceptual plans to develop Cayoosh Resort appear to be logistically and economically viable. In summary, there are eleven primary conclusions as follows:

- 1. The Comfortable Carrying Capacity (CCC) of the proposed development ranges from 9,000 to 12,000 skiers per day.*
- 2. We are confident that with refined planning, the terrain is capable of supporting approximately 12,000 skiers per day in a relatively well balanced fashion coinciding with the Proponent's target market.*
- 3. Correlating with the CCC, the number of acceptable Bed Units (BUs) ranges from 10,800 to 14,700.*
- 4. We are confident that with detailed planning the site is capable of supporting up to 14,700 BUs coinciding with the range of proposed public, private and employee accommodation, integrated into the proposed development areas.*
- 5. The proposed capital costs for all of the resort specific facilities appear to reflect current and realistic estimates.*
- 6. The access road connecting the resort to Duffey Lake Road is the most significant physical and capital cost constraint to the resort's development.*
- 7. The access road is technically feasible, however, as recognised by the Proponent, the lower road construction will be difficult. The cost presented by the Proponent may be below actual construction cost. Depending on the road standard and geotechnical stability requirements, costs could increase by as much as \$10,000,000.00.*
- 8. The cost of delivering sewage to the remote sewage disposal site at the junction of Melvin and Cayoosh Creeks has not been included. This cost could be in the order of \$2,000,000.00 to \$2,500,000.00. We recognise that it is the opinion of the Proponent's engineers that a suitable discharge site can be provided in the upper valley.*
- 9. The review of the skier market in conjunction with the potential product that Cayoosh may offer, suggests that there should be sufficient support to achieve success through the first two phases of development, even if Garibaldi at Squamish comes*

on-line. However, it should be noted that if the resort was limited to the first two phases of its proposed growth, Cayoosh would fall short of its potential, in turn negatively impacting on the probability of long term success.

10. Subsequent to the first two phases of development, assuming that the physical potential of the site has been fully realised through well crafted design and development, further growth of the resort, in terms of skier visits, will depend upon the ability to attract international destination clientele.
11. Although more detailed cash flow information is requested for the next level of Commercial Alpine Skiing Policy (CASP) submission, it appears that the resort can be economically viable providing that financial support or creative financing to pay for the access road is established.

Coinciding with these conclusions, we recommend that from the standpoint of project feasibility, the Proponent be offered the opportunity to proceed with the project. In order to facilitate the next step toward implementation and development, we recommend that the following refinements and additional information be provided.

1. Refine the Mountain Master Plan as per CASP, by phase, in an effort to:
 - i) take into account all environmental impact considerations, as identified under the Environmental Assessment (EA) process
 - ii) take into account the possible loss of terrain and lift locations due to goat habitat.
 - iii) balance the downhill capacity of the skiing with the uphill capacity of the ski lifts (the current plan appears to be over lifted and unbalanced).
 - iv) balance the distribution of the terrain development with the Proponent's skier skill class target market (the current plan offers significantly more expert skiing than required by the target market goals).
2. Develop a detailed Village and Residential Master Plan that coincides with the refined Mountain Master Plan.
3. Develop a detailed Summer Facilities Plan.
4. Locate the sewage treatment and sewage disposal field on the Site Plan and make comment about odour control.
5. Complete a geotechnical review of the proposed road construction to confirm the design requirements and the cost estimate.
6. In preparation of the mountain, village and residential plans for CASP approval, the proponent must consider the finding of the Environmental Assessment including mitigation plans and be sure that these requirements are appropriately incorporated into the Master Plans.
7. If and when an EA Certificate is issued, develop a detailed Financing Program for the access road (i.e. arrangement with Transportation Financing Authority (TFA);

creative funds generation such as a ski lift ticket surcharge; real estate development cost charges; etc.)

8. Taking into account all changes in the Master Plan and the resultant capital cost estimate refinements, complete a set of financial projections as per the CASP requirements that sequentially describe the resort's cashflow on an annual basis with a net present value calculation to verify the feasibility of the project..."

B. Engineering and Infrastructure Conclusions

Subconsultant C.J. Anderson Civil Engineering Inc. (CJA) concluded as follows:

"...It is CJA's opinion that all the information presented to date indicates that the required infrastructure to service the resort is technically feasible and the proposal should be allowed to proceed to the next level.

As is typically the case, there are details of the infrastructure which are not yet confirmed and/or finalized at this stage of the project. These details would normally be dealt with after preliminary approval of a project is received and during the actual permitting process. This approach is reasonable.

The cost estimates presented in the project binders are based on 1991 pricing and have not been updated to match the current proposed water and sewage treatment facilities and 1998 construction costs. CJA estimates the infrastructure cost estimates may be generally low by an estimated 15%. CJA has not seen any cost estimates for the more recently proposed Urban System infrastructure program.

It is CJA's opinion that the road construction costs presented may be low by approximately 30% or more. This item is critical to the pro forma of the project and it is our recommendation that the geotechnical engineering constraints and mitigation measures required for the proposed KWL road access route design be fully investigated at the CASP stage of the approval process..."

C. Marketing and Financial Conclusions

Subconsultant Lynnparks Consulting Ltd. noted the following key points, selected from its Executive Summary:

"...The Cayoosh Resort will not be able to access the Vancouver day skier market due to the driving time of approximately 3-1/2 hours. The Cayoosh Resort will, however, be able to access the day skier market out of Whistler and destination skiers staying in Whistler.

The market analysis estimates that there will be demand for the Cayoosh Resort. However, the skier visit projections contained in the market analysis assume growth rates that are not realistic compared to the performance of resort areas in British Columbia. The skier visit projection contained in the Cayoosh Resort Market

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Assessment assumes 543,316 skier visits at the end of ten years or an average increase of 54,000 skier visits per year or an annual compound growth rate of 26%. A revised projection suggests the potential skier visits at Cayoosh Resort may range from between 325,000 – 395,000 skier visits at the end of the ten year period..."

and

"... The Cayoosh Resort will not compete in the same skier market as the proposed Brohm Ridge project. Brohm Ridge will access primarily the Vancouver rubber tire skier market while Cayoosh will access the cabin/condo market out of Whistler and the international destination market. The Cayoosh Resort and the Garibaldi at Squamish proposals need to be considered separately on their merits, as there is little or no overlap in the skier markets for these two resorts..."

and

"... The skier visit forecast as noted in the body of the report is overly optimistic but does not materially impact on the feasibility of the project. The proponent recognises and accepts that the current skier visit forecast may be optimistic and this will be taken into account in future calculations.

The capital budget is consistent with current capital costs expended for ski operations in BC Mountain resorts. The Phase I capital costs are \$31.8 million and the Phase II capital costs an additional \$16.3 million. The capital budget presented in the application does not include any of the accommodation units or real estate development for the proposed resort..."

and

"... The potential economic benefits to the Province of British Columbia as noted in the economic impact study exceed the potential returns to the proponent or to the investors. Assuming there are limited environmental costs to the project, the Province of British Columbia and its residents have the most to gain economically from a project of this nature compared to possible returns to the applicant and associated investors..."

and

"... The potential economic benefits to the Province of British Columbia of a successful destination ski area are large and are detailed in the socio-economic report in binder 2 of the application. The economic benefits listed ... are based upon the skier visit projection of 543,000 skier visits at the end of ten years that may be optimistic as discussed in the market assessment section. Applying a more conservative approach of approximately 395,000 skier visits by the end of year 10 would proportionality reduce the benefits below by approximately 30%. The economic benefits would still remain substantial after this adjustment..."

Review Agency Position (5.8)

Both BCAL and MEI considered that the report contained a realistic appraisal of the project's chances of financial and market success.

Issue Treatment in Proponent's Project Report (5.8)

In its project report, NGR provided updated financial and market information and break-even analysis. The data are contained in 1998 reports by Ecosign and Lee & Associates. Ecosign repeated the ten conclusions from its 1996 assessment with only minor adjustments to some of the figures.

NGR also communicated its general concurrence with the findings of the Brent Harley and Associates (BHA) independent feasibility assessment. NGR also argued that it would be unrealistic to expect more detailed financial information based on the conceptual level of project design typically required for the EA process, for the following reasons:

- " ...
- a. *The level of detail requested is impractical for a remote site without access and could not be produced at 'conceptual planning stage' levels with any reasonable degree of accuracy.*
 - b. *The financial feasibility of the project is largely determined by the requirements of the Ministry of Transportation and Highways and the costs of the access road. MoTH officials have clearly indicated that the environmental feasibility issues should be first decided and resolved prior to any commitment on access financing. This is a logical approach.*
 - c. *Projections of real estate sales and costs are not practical at this stage of review and are not realistic until detailed site engineering is completed. Most resort real estate projects are not financable until at least 50% of the units are pre-sold. This makes financial forecasting very difficult.*
 - d. *Finally, this level of financial information was not required with the Blackcomb CASP approval, nor the recent Sun Peak's re-development nor for any other master plan submission which the Province has already approved..."*

NGR reiterated the view of Lynnpeaks Consulting Ltd. that "... *The potential economic benefits to the province of British Columbia ... exceed the potential returns to the proponent or to the investors...*"

Finally, NGR expressed concern about the possibility of two new resorts proceeding on Highway #99 concurrently. It noted that, if both resorts were to commence operations within five years of each other, this could negatively affect the ability to sell resort real estate, and as a result, the overall financial returns gained from one or both projects. It also observed that the Melvin Creek/Cayoosh resort is targeting destination skiers and regional skiers from Whistler to Cache Creek, and that day skier traffic from Vancouver would be extremely limited as a result of the driving distance.

Agency Review Comments on Project Report (5.8)

The project committee concluded that NGR has satisfied the reporting requirements in the specifications. More detailed and up-to-date information and analysis will be needed at the post-EA ski area master planning stage, if the project receives an EA certificate.

Proponent's Responses to Agency Comments on Project Report (5.8)

NGR made no comment on the review comments received from government agencies, but in its responses to public comments on the project report, it identified the issue of government subsidy and contributions to access road construction and Highway #99 upgrading as one of four recurrent themes in public comments. By way of response, it points out that MoTH has built and maintained most public access roads to ski areas in the past.

Public Comments on Issue and Project Committee's Position (5.8)

1. PUBLIC COMMENT:

Project is not feasible with the current stagnation in ski industry growth.

PROJECT COMMITTEE POSITION:

Accepts the third-party independent (BHA) assessment, which concludes that the project is a legitimate business opportunity under certain circumstances, but with some financial and marketing challenges. According to BHA, the proposed project has the potential to be economically viable, providing that the resort's management is effective in vigorously marketing the resort, and that mutually satisfactory arrangements can be made for government financial assistance for the project.

2. PUBLIC COMMENT:

What effect would this resort have on proposed Garibaldi resort and vice versa?

PROJECT COMMITTEE POSITION:

Accepts the findings of the BHA assessment, which concluded that the project could co-exist with the proposed Garibaldi at Squamish resort because they are targeting significantly different skier markets.

3. PUBLIC COMMENT:

Annual snowpack seems inadequate for project viability.

PROJECT COMMITTEE POSITION:

Accepts the endorsement of NGR's snowpack projections in the BHA independent assessment. For NGR, Ecosign had analysed snow conditions and solar exposure, and had concluded that any snowpack deficiencies could be offset through snowmaking, which is employed routinely to supplement deficient snowfall at most ski resorts in BC. BHA concurred.

4. PUBLIC COMMENT:

The feasibility of the project should not depend upon government subsidies either for transportation or power supply.

PROJECT COMMITTEE POSITION:

The province is aware of NGR's desire for government funding assistance, but is not prepared to consider and make a decision on the request until later in the project planning process, when a reliable business case can be presented by NGR, based on more detailed resort design and marketing plans.

5. PUBLIC COMMENT:

The resort cannot be meaningfully assessed without a comparative assessment of all possible future ski resort locations in the larger Lower Mainland region.

PROJECT COMMITTEE POSITION:

Accepts BHA independent assessment, which concludes that the project could co-exist with other existing and proposed ski operations in the region because it is not targeting the same skier markets.

First Nations Comments on Issue and Project Committee's Position (5.8)

No specific comments on project feasibility were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (5.8)

NGR will provide more detailed financial and marketing information at the ski area master planning stage of CASP.

Status of Issue at Time of Referral to Ministers (5.8)

The project committee is satisfied with the level of financial and market information available for the EA review stage of project consideration. The project committee agrees with BHA's conclusion that the resort represents a legitimate business development opportunity which has the potential to be a sustainable venture in the long-term, but that key marketing and financial issues need to be addressed in more detail at the ski area master planning stage.

In separate discussions with the province, outside the ambit of the EA process itself, NGR has reaffirmed the need for some sort of government funding assistance – e.g. a grant issued for road development or on some other basis – if the project is to proceed on a sound financial footing. NGR has been advised that the province wishes to delay any consideration of possible financial assistance for the resort until after the EA certification decision. If the project is approved under the *EA Act*, the government may be prepared to consider financial assistance, but any decision would have to be based on a more detailed business case than is possible at present, given the conceptual level of project design.

In summary, as noted in section 8.3 with respect to sustainability issues:

Project feasibility - According to an independent third-party review of the project, commissioned for the project committee by the EAO, in collaboration with MEI and BCAL, the proposed project layout and operations appear logical and technically and economically feasible over the long term; and the proposed project has the potential to be economically viable and sustainable on a long-term basis, providing that the resort's management is effective in vigorously marketing the resort, and that mutually satisfactory arrangements can be made for government financial assistance for the project.

5.9 RESORT GOVERNANCE

Issue(s) (5.9)

The EA review includes consideration of resort governance issues which are relevant to the assessment of potential effects of the project, and to options for managing those effects.

Content of Application (5.9)

Resort governance was not discussed in the proponent's application.

Agency Review Comments on Application (5.9)

In its February 20, 1997 correspondence, the District of Squamish commented on the application's failure to discuss the municipal structure/organisation proposed for the resort. Squamish stated that it was important that a clear municipal structure for the resort development be established, especially for taxation purposes. Squamish further noted that if the Growth Management Strategy referenced in the application was pursued, it would be important for it to include a discussion of the municipal structure for the resort.

In its March 6, 1997 letter, SLRD echoed the concerns expressed by Squamish stating that the application should include discussion of the governance issue relating to the project area. SLRD noted that the issue was important since it related to the jurisdiction of land use regulation and management of the resort development. In this respect, a number of options could be considered, such as to remain an unincorporated area within the SLRD, to join the District of Lillooet, or to become an independent municipality or mountain resort improvement district under *the Mountain Resort Associations Act*.

Proponent's Responses to Agency Comments on Application (5.9)

In separate letters each dated April 10, 1997, NGR responded to the comments from Squamish and SLRD respectively. In these responses, NGR stated that in terms of governance structure at the resort, it planned to form a Mountain Resort Improvement District (MRID) under the *Mountain Resort Associations Act*. This special improvement district would operate under the SLRD and would provide some municipal services such

as street lighting, recreational and parks facilities, solid waste management. NGR noted that while the *Mountain Resort Associations Act* anticipated special Mountain Resort Municipalities, it expected that in the development years, the resort would operate under the management and control of the SLRD. If a larger permanent population developed or if it was deemed necessary to create local government, then the resort could consider becoming a Resort Municipality, but this would be very unlikely in the first ten years of operation. NGR indicated it supported the SLRD Official Community Plan and the SLRD Land Use Plan for the Duffey Lake corridor which called for no settlement areas between Lillooet and Pemberton along the Duffey Lake Road.

Project Report Specifications (5.9)

No reporting requirements with respect to local governance issues were established in the project report specifications.

Issue Treatment in Proponent's Project Report (5.9)

In Volume 2, section A of the project report, NGR provided a brief discussion of resort governance issues. NGR indicated that while most mountain resorts in BC are governed under Regional District jurisdiction, the *Mountain Resort Associations Act* permits special governance features. Resort communities may have special mountain resort improvement districts, mountain resort associations, mountain resort business improvement areas and ultimately, mountain resort municipality status. For the Melvin Creek/Cayoosh resort, NGR anticipated that water and sewer services would be managed and owned by SLRD and would be transferred to the Resort Municipality should such an entity ever be formed. These infrastructure services would be provided to the development by the land development company. NGR anticipated that a mountain resort improvement district would likely assume street lighting, parks and trail maintenance, snow removal from public areas, landscaping, and maintenance functions. The mountain resort association would raise funds from property owners to finance marketing programs for the new resort.

Agency Review Comments on Project Report (5.9)

In its letter dated September 8, 1999, Squamish reiterated that it had outstanding concerns with local governance and the funding of municipal services for the proposed resort.

Proponent's Responses to Agency Comments on Project Report (5.9)

NGR responded to Squamish in its letter dated October 26, 1999. NGR confirmed that any approvals for the resort would not result in additional funding of the SLRD functions by the District of Squamish. All infrastructure and services related to the project, including the planning approval process, would be the responsibility of the proponent.

Follow-up Exchanges (5.9)

MMA has advised the project committee that resort communities such as that proposed for the Melvin Creek/Cayoosh project will require: (i) local governance and 'public' services; and (ii) 'private' services related to business promotion. The demand for public services, such as sewers, water and fire protection, exists in all mountain resort communities, as in any growing community. At the same time, these communities also

have a special need for co-ordinated business-related services, such as a central reservation system, signage and marketing. A variety of special circumstances need to be addressed at mountain resort communities, such as the following:

- mountain resort communities are often located in unorganized, rural areas;
- mountain resort communities are usually surrounded by Crown land;
- mountain resort communities experience rapid growth and escalation in land values;
- populations fluctuate strongly on a seasonal and weekly basis, putting pressure on both public and private services;
- a few initial resort owners shoulder relatively large risks compared to later investors, and therefore risk much more if the resort community experiences financial difficulty; and,
- individual businesses rely on collective success, and therefore everyone involved must be very focused in promoting the resort's businesses.

Currently, all land at the resort site is Crown land, but, as at other ski resorts in British Columbia, NGR envisages the transfer of some land in the base development area to private ownership (i.e. to be held in fee simple by private parties). Local government would have jurisdiction over the private land holdings, and could regulate the use of land through both Official Community Plan (OCP) and zoning bylaws. Indeed, even though the entire area consists of Crown land at this time, the SLRD, the body which currently discharges local government's jurisdiction over the area, has previously zoned the area as Rural Resource 1 (RR1) under SLRD Zoning Bylaw No. 72, 1975, a zoning by-law designation which is intended to be compatible with current Crown-land-based activities in the area (e.g. agriculture, raw material extraction, outdoor recreation, single family dwelling, etc.).

A. Governance Options

There are various options for providing local governance and business promotion services.

Local government services

With respect to governance, the resort community could remain unincorporated, with the SLRD managing the development and the delivery of local government services at the resort. However, other options are available under the *Mountain Resort Associations Act*. For example, the province, with SLRD agreement, could establish a 'mountain resort improvement district' (MRID), which could provide local public services such as water supply and fire protection to the area (although not business promotion services). Responsibility for land use planning and regulation would continue to rest with the SLRD. MRID status might be an appropriate temporary means of providing services at the outset of development, if the SLRD is not in a position to do so (although SLRD provision of service is the preferred option). A MRID is created by Cabinet order, and is overseen by MMA. A MRID would have a board of trustees, initially appointed by Cabinet, but later elected by the electors of the improvement district, either at an annual general meeting or in a formal local-government-style election. It would have no direct

reporting relationship to the SLRD, although, as noted above, the latter would have to approve its creation.

Business promotion

This legislation also provides opportunities to create institutional structures to promote the economic interests of a mountain resort. One option is to set up a mountain resort association (MRA). Under the legislation, the Minister of Municipal Affairs, with the approval of the regional district, could formally establish a 'mountain resort area' (MRAr). The Minister could consider such a designation at any location where year-round recreation facilities already exist or are proposed (including overnight accommodation and ski lift operations). Within a MRAr, the Minister may then designate some land to be 'mountain resort land', and at the same time, may, by order, incorporate a MRA to oversee the promotion of the business or economic development interests of a resort. An MRA, once created by MMA, has the status of a reporting society under the *Society Act*, and is supervised through the administrative mechanisms set up under that Act. An MRA would have a board of directors, elected by its members at an annual general meeting in accordance with its bylaws and the *Society Act*. The bylaws have to be approved by the Minister.

An MRA is empowered to provide business-related services necessary to promote a successful resort, but not to deliver local governance or classical public services (e.g. planning and land use regulation, sewer, water, local roads, local parks, etc.), which continue to be delivered by the relevant local government, and funded through the local government taxation system. As a society, it may acquire and hold property, and thus may indirectly become involved in the delivery of recreation facilities. An MRA has the authority, as set out in its bylaws, to impose levies on its members for business promotion services and any facility management related to its land holdings, and is accountable to its members. Within the designated mountain resort land, membership of an MRA by businesses and land owners is required. A MRA is a legal entity with a built-in taxation system, and with the mandate to promote the collective economic interests of a community through effective marketing and promotional programs.

A second option for promoting the business interests of a mountain resort is for the SLRD to create a 'mountain resort business improvement area' (MRBIA) by bylaw. Businesses which operate within such areas, and owners of property in such areas, can be incorporated with a similar mandate to those within a MRA (i.e. to finance effective marketing and promotional programs), but, while not directly under local government's control, are required to develop a budget for local government approval, to account for its expenditures, and be willing to be audited. MRBIAs deliver business-related services only, while local government would continue to be responsible for local governance and public services, and thus, would retain its taxation authority. Essentially, a MRBIA is a local government vehicle to levy and collect a property tax levy from the business community on behalf of the business community. The municipal council or regional district board merely acts as a financial agent for a non-profit association or corporation, usually the former. The association would be incorporated under the *Society Act*, would have its own set of bylaws, and would elect a board of directors at an annual general meeting.

The *Mountain Resort Associations Act* is modelled on the *Resort Municipality of Whistler Act*, and provides developers and mountain resort communities with a legislated basis for supplying and paying for both public and private services through the modification of existing local government powers. Further information is contained in the 1996 MMA publication: *A Guide to British Columbia's Mountain Resort Associations Act*, which is available on MMA's website at <www.gov.bc.ca/marh/>.

B. Factors in Selecting a Governance Option

The question of local government structure is complex, but should be resolved at a fairly early stage of the development, so that, if some form of mountain resort designation is intended, this can be addressed in consultation with the relevant local government. The appropriateness of the various local governance and business promotion options depend on such factors as the size of the resort, the extent to which there is a permanent year-round population and the diversity of the ownership structure of the community. Thus, it may be that, with respect to governance, after weighing the pros and cons, the continued provision of local governance and service delivery by the SLRD may be most appropriate. In enacting the *Mountain Resort Associations Act*, government envisaged resorts passing through various transitional phases before qualifying for municipal status, which would have to be preceded by a referendum, once there is a permanent, full-time, year-round population. The issue of incorporation would ultimately be considered only when there is a permanent resident population which is in a position to determine how it can best be governed.

C. Role of EA Process

With respect to the relationship between the determination of an appropriate form of governance for the resort community and the current EA review of the project, the project committee notes that decisions on creating the institutional structure for local governance and service delivery, and for business promotion, should await a decision on the overall acceptability of the resort under the *EA Act* and subsequent negotiation of a master development agreement with BCAL under the *Land Act*. The project committee did not consider that strategic issues with respect to the effects of the project or its long-term prospects as a business venture were raised by the choice of governance model available under the *Mountain Resort Associations Act* and the *Municipal Act*.

Public Comments on Issue and Project Committee's Position (5.9)

No public comments were received on the issue of resort governance.

First Nations Comments on Issue and Project Committee's Position (5.9)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort* (undated).

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is

recognised to be at government's own risk. An April 7, 2000 letter from Chief Mike Leach, on behalf of St'at'imc Chiefs, reaffirmed that the study is considered a draft which may need further work, once the Cultural Heritage Study Final Report is completed.

1. FIRST NATIONS ISSUE:

The report noted that NGR plans to develop the resort through a combination of 'municipal resort type infrastructure' and 'developer-owned infrastructure', largely modelled on the Whistler/Blackcomb resort, and the related *Resort Municipality of Whistler Act*. The report suggested that an alternative model would be for the government services to be co-financed by NGR and St'at'imc. This approach would allow for a direct source of both annual revenue and employment to be directed to First Nations. Alternatively, certain essential services could be delivered at the resort by the St'at'imc, such as police and local snow-clearing/summer road maintenance. The report specifically recommended consideration of how a local governance structure might be established at the resort which is consistent with St'at'imc aboriginal title and rights throughout their traditional territory, including the Melvin Creek watershed. Through such a structure, recognition by the province and NGR of paramount aboriginal rights and title to the entire Melvin Creek watershed could be embedded. With that fundamental principle in place, due consideration could then be given to an appropriate governance structure and delegation of authority to provide essential services and undertake tax collections from property owners.

PROPONENT RESPONSE:

The report suggests that St'at'imc companies or services could provide options for municipal-type infrastructure and developer-owned infrastructure. NGR agrees to the possibility that resort security, snow-clearing, road maintenance and other similar services could be provided by St'at'imc-based development corporations. NGR also notes that there could be opportunities for reserve-based companies to provide services of all types to the resort. The recommendations with respect to governance structure and delegation of authority to provide the essential services and undertake tax collection from property owners are best addressed by the province.

PROJECT COMMITTEE POSITION:

MMA has advised the project committee that SLRD is the local government for the area in which the proposed resort would be located, and thus has jurisdiction for land use and local services. Delivery of local services is a matter for NGR and SLRD to resolve. The *Mountain Resort Associations Act* provides for governance options which could be adopted for this resort, and the document '*A Guide to British Columbia's Mountain Resort Associations Act*' contains information on this matter. The project committee is uncertain whether taxation was intended to be encompassed by the notion of a direct source of both annual revenue and employment. Taxation authority would not be conferred upon the St'at'imc First Nation, although a contractual arrangement between the SLRD and St'at'imc is a possibility, and a matter for local government consideration. In the meantime, the province recognises that the St'at'imc claim aboriginal rights and title in the area of

the proposed resort development. There may be potential for developing government structures or linkages which reflect these claims.

Proponent's Commitments Relevant to Issue (5.9)

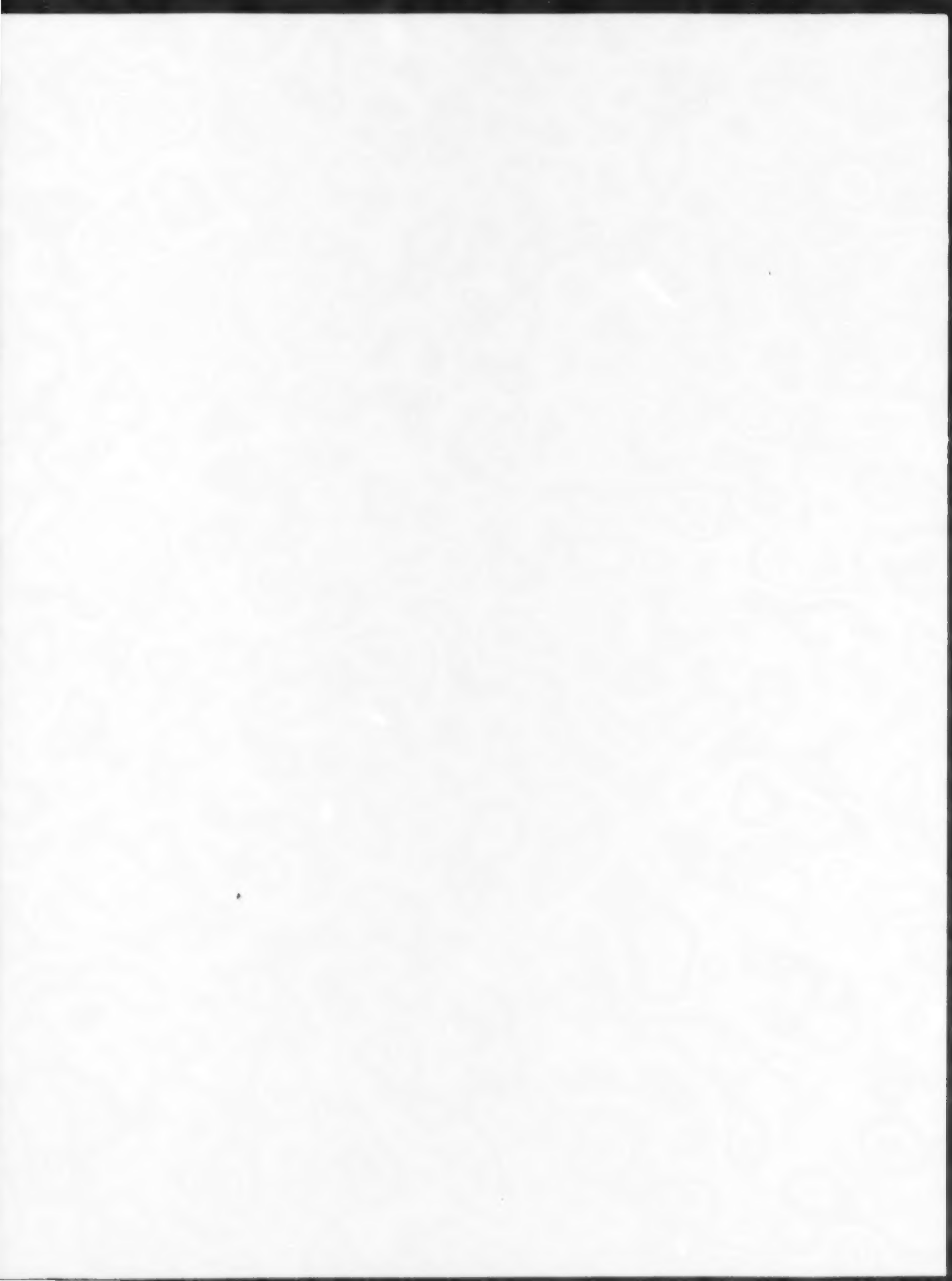
NGR has committed to the following with respect to governance issues:

- it agrees that resort security, snow-clearing, road maintenance and other similar services could be provided by St'at'imc-based development corporations, subject to agreement with NGR and appropriate agencies; and
- it agrees that there could be opportunities for Reserve-based companies to provide services of all types to the resort, subject to agreement with NGR and appropriate agencies.

Status of Issue at Time of Referral to Ministers (5.9)

The project committee considers that the mode of resort governance does not raise strategic issues with respect to project effects for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Resort governance* – The project committee did not consider that strategic issues with respect to the effects of the project or its long-term prospects as a sustainable business venture were raised by the choice of governance model available under the *Mountain Resort Associations Act* and the *Municipal Act*. The committee notes that NGR has identified the possibility of contracting various types of service at the resort to First Nations companies, if they wish to participate economically in the project.



**CONSIDERATION OF POTENTIAL
EFFECTS OF PROJECT**

CHAPTER 6.0

6.0 CONSIDERATION OF POTENTIAL EFFECTS OF PROJECT

6.1 TECHNICAL DESIGN AND SAFETY ISSUES

6.1.1 RESORT

6.1.1.1 GEOTECHNICAL HAZARD ISSUES

Issue(s) (6.1.1.1)

The issues identified include the need to address terrain hazards potentially affecting development sites, and ensuring that development remains outside flood-prone areas.

Content of Application (6.1.1.1)

In section 9 of the application, NGR submitted two geotechnical reports: *Preliminary Assessment of Terrain Hazard* (April 1992) and *Assessment of Terrain Hazards* (January 1993), both prepared by Bruce Geotechnical Consultants Inc. These reports described the geological setting of the proposed resort area, identified past and potential terrain hazards, and identified areas for further detailed study.

Agency Review Comments on Application (6.1.1.1)

Some project committee members continued to have concerns regarding geotechnical hazards. They required that NGR more fully establish that the sites proposed for development would be technically feasible, and would not have to be significantly reconfigured or largely abandoned due to the risk posed by terrain hazards.

SLRD identified several outstanding issues regarding potential geotechnical hazards in its February 25, 1997 letter. Referring to the information presented in the application, SLRD noted that part of the commercial core of the proposed development (Area 2) would be located in an area prone to flooding. Similarly, an area identified as part of the residential development would potentially be exposed to a rock fall hazard. NGR was requested to undertake further assessments of hazard potential using SLRD's policy document *Hazard Acceptability Thresholds for Development Approvals by Local Government* as a guide.

MELP identified specific sections within the proposed commercial and residential development area which would be potentially prone to either flooding or rock fall hazards. MELP noted that it requires all residential and commercial development to be located above the 1-in-200-year flood level, but that, since this can be difficult to determine for smaller watercourses like Melvin Creek, a simplified measure of siting all development at least 1.5 metres above the natural boundary could be adopted.

Proponent's Responses to Agency Comments on Application (6.1.1.1)

In a letter to SLRD, dated April 10, 1997, NGR committed to avoiding any areas identified as risk areas under SLRD's hazard review requirements for resort development. NGR also acknowledged the need for further detailed study of the identified landslide and debris flow areas. SLRD subsequently indicated that it was satisfied that any geotechnical issues associated with the settled areas of the proposed resort are manageable, and can be addressed in future approval processes.

An April 1997 report by Urban Systems Ltd., provided by NGR, indicated that any flooding hazards could be minimized by respecting MELP's requirements for vertical and horizontal setbacks from the high-water mark of Melvin Creek. In addition, NGR committed to undertake riparian value studies along Melvin Creek. MELP indicated its general satisfaction with these commitments.

Project Report Specifications (6.1.1.1)

Three specifications imposed reporting requirements for the project report related to geotechnical issues. The first (C.1#1) was to undertake a mapping exercise which included all potential terrain hazards at a level of detail (1:20,000 minimum) that would indicate the extent, if any, to which proposed development sites, including the access road, would be subject to significant terrain hazard. The second specification (C.1#2) required a conceptual-level discussion of any proposed monitoring and mitigation measures for reducing terrain hazard risk to the proposed development to an acceptable level. The third specification (C.1#3) related specifically to floodplain development. It required a more detailed discussion of how the proposed development would be protected from floodplain-related hazards such as debris torrents, erosion and flooding.

Issue Treatment in Proponent's Project Report (6.1.1.1)

1. Maps identifying terrain hazards and environmental constraints at the 1:10,000 scale were prepared by NGR and included in the project report at a smaller reporting format of 1:20,000.
2. As part of its submission, NGR provided a May 7, 1999 report by EBA Engineering Consultants Ltd. (EBA), entitled *Preliminary Assessment of Geological Hazards at Development Sites - Proposed Cayoosh Resort*. This study indicated that while most of the 70 ha area proposed for commercial and residential development appears to fall outside the zones affected by debris flow/debris flood run-out and other slope instabilities, approximately 7 ha are subject to potential debris flow hazards. However, based upon this preliminary assessment, EBA noted that mitigative measures which would address these hazards would likely be technically feasible. EBA stated the need to undertake further studies prior to development, including remote monitoring for ground movement, and site-specific hydrological, hydrogeological, and geotechnical studies. NGR committed to undertaking these studies after initial road access to the Melvin Creek valley is constructed, and prior to submitting site-specific development plans.
3. In addition, NGR made several other commitments pertaining to mitigating potential terrain hazards: (a) all habitable structures will be located outside any and all hazard areas (i.e. zones of snow avalanche, rock avalanche or slides, floodplain and debris

flow), unless site-specific mitigation removes all potential risks; (b) all development will be located outside areas of risk (rockslides, debris flow, and flooding) or above the 1-in-200-year potential flood level - a site-specific assessment of the valley hydrology, including a 1-in-200-year flooding assessment, will be completed at the permitting stage; (c) a site-specific rock-fall hazard assessment associated with any accommodation development will be completed prior to development applications. Approval for development in any areas of geological or terrain instability will not be sought unless site-specific ground-proofing has been carried out, and practical mitigation measures, indicating such sites are safe from risk, have been proposed.

4. The only area identified in the project report with a potential flooding hazard was the large wetland area in the vicinity of the proposed upper village development. A significant portion of these wetlands will be altered from their natural state (described further in section 6.2.3.2 - *Wildlife Resources*). Due to its large size and relatively flat nature - such terrain is uncommon in the Melvin Creek valley - this area is an important location for the proposed resort development. As well as being part of the essential ski terrain, three lift terminals, residential and commercial development, and the main access road would also be sited there.

NGR committed that all buildings would be located above the 1-in-200-year flood level and that all living space and goods damageable by flood waters will be located 1.5 m or more above the natural boundary of applicable streams. Similarly, except where stream crossings or base lift terminals are proposed, site construction and work will generally not occur within a 15-m riparian buffer zone either side of Melvin Creek. NGR confirmed that minimum soil disturbance will take place within the creek setback areas, and no building sites will be located within riparian zones. Additionally, NGR has indicated that a floodplain plan will be developed for this area, following several years of flow monitoring in Melvin Creek. The project report contained NGR's Environmental Management Plan, which further outlines the precautions to be taken to avoid site drainage and erosion problems. To mitigate wetland losses, the development plan will try to maximize remaining wetland values located in other areas of the valley (by reserving wetlands in their natural state), and will propose the construction of a lake surrounded by a green belt park, along the easterly side of the wetland area.

Agency Review Comments on Project Report (6.1.1.1)

In a letter dated October 12, 1999, as the RA under CEAA, DFO expressed concern with the potential for a ridge spreading hazard at the proposed resort development. Ridge spreading is a geological process which can reduce the stability of a slope and cause landslides of varying degrees. DFO noted that, although this issue was not addressed in the project report specifications, the potential for a ridge spreading problem was identified in the Bruce Geotechnical Consultants Inc. reports for a section of the development referred to as Area 3. DFO indicated that it raised this issue previously during a teleconference (July 27, 1999), at which time NGR agreed to undertake, for Area 3, an assessment of the hazards associated with mountain slope movements, including the nature of large-scale rock slope instability. DFO requested that a report which addressed the issue to the satisfaction of Natural Resources Canada (NRCAN) be provided.

MELP, in its November 1, 1999 correspondence, also requested clarification regarding the extent to which ridge spreading may alter the development or its layout, and the resulting potential impacts on the environment. MELP indicated that the information provided in the project report pertaining to debris flows, flooding and channel stability was sufficient for the EA level of assessment. It was noted, however, that more detailed, site-specific assessments and other requirements will be necessary to address these issues in more detail at the ski area master planning stage.

Regarding the floodplain development issues cited in specification C.1#3, MELP noted concern with the potential loss of mature timber within the riparian zone of Melvin Creek, either through harvesting or increased wind-throw. In the case of the former, selective harvesting of mature timber within the riparian zone would decrease or eliminate the input of large woody debris (LWD) into the creek channel, which in turn could decrease the natural regulation of peak flows and lead to channel instability. Alternatively, the increase in wind-throw along the edges of riparian zones, which could result from the harvesting of adjacent lands, would result in a significant increase in the input of LWD into the creek channel. This could, in turn, result in debris jams in the channel. In order to address these concerns, MELP requested that NGR commit to: (a) preserve the riparian zone by retaining existing trees and utilising a wind-firm design for riparian zone edges outside the 15-m area wherever possible; and (b) as part of the development of the master plan, undertake a hydrological study of the watershed which integrates information on hydrology, channel morphology and the effects of logging, roads, other paved/developed areas, snowmaking, storage, stormwater, as well as changes to the rate of LWD recruitment to the channel.

MELP also further commented on the riparian protection issue. Comments and issue resolution are discussed in section 6.2.3.2 - *Wildlife Resources*.

Proponent's Responses to Agency Comments on Project Report (6.1.1.1)

On January 18, 2000, NGR provided updated geotechnical information including a report by EBA, entitled *Ridge Spreading and Associated Geohazards - Melvin Creek, BC* (Dec. 1999). The report examined the ridge spreading process, and evaluated the likelihood of large-scale catastrophic failure. The overall conclusion of the report was that it was very unlikely that a catastrophic mass movement would occur at the site in the foreseeable future.

Follow-up Exchanges (6.1.1.1)

In its February 25, 2000 correspondence, DFO indicated that the ridge spreading issue was resolved to its satisfaction. MELP provided comments with respect to ridge spreading on March 2, 2000. MELP acknowledged the conclusions of the EBA report, but in order to fully address the issue, requested that NGR commit to: (a) employ appropriate measures to reduce risk when designing works in areas with a potential for slope movement; (b) provide design plans for structures in areas of risk to the MELP RM-Water during the appropriate post-EA development stage; and (c) complete a detailed analysis of rockfall runout potential before development commences.

Regarding debris flows, flooding and channel stability, NGR confirmed that more detailed information would be provided during the post-EA phases of review. Sufficient

detail would be provided to confirm that all areas of proposed development would be safe, and any proposed site mitigation or protection would comply with acceptable engineering practices. NGR further stated that the resort concept would still be feasible if these small hazard sites prove to be non-development sites.

In MELP's March 2, 2000 correspondence, it recognised NGR's commitment to complete more detailed assessment of debris flow/torrent at the post-EA CASP stage, but specified several details which needed to be included in that commitment. First, the commitment needed to incorporate completion of a detailed site-specific and field-based debris flow risk study to characterise risk hazard and mitigation requirements at development sites. MELP also outlined specific requirements to be included in this risk study and the mapping that would accompany it. Further, MELP noted that all of the additional information would need to be prepared to the satisfaction of the RM-Water.

Regarding flooding and channel stability, MELP requested that NGR clarify what additional information would be provided at the subsequent post-EA review processes. MELP also confirmed that NGR needed to commit to provide standard site-specific urban planning design details, including property setback distances, to protect from flood and channel stability hazards to the satisfaction of the Regional Water Manager (RM-Water).

With respect to floodplain development issues, NGR committed to preserve the riparian zone through retention of existing trees and windfirm design of riparian zone edges. Further, NGR committed to provide a hydrology study and plan during the CASP master plan process. Regarding the requested 15-m minimum riparian setback, NGR noted that although channel destabilisation can occur as a result of windfall, this was not anticipated along Melvin Creek, due to the physical nature of the creek. NGR explained that above the 1500-m elevation, between the two proposed villages, Melvin Creek was well incised (1-2 m deep and 1-2 m wide), so that LWD would be unlikely to enter it. Further, NGR noted that most of the timber along the creek would be preserved, and that the EBA reports indicated that the creek channel has been generally stable for some time, with no evidence of flooding or major erosion over the past 40 years. Refer to section 6.2.3.2 (*Wildlife Resources*) for further discussion of the riparian/wetland issue.

MELP, in its March 2, 2000 correspondence, recognised NGR's commitment to provide a hydrology study and plan for the Melvin Creek watershed. It clarified however, that the study needed to integrate hydrology and channel morphology, the effects of logging, roads, other paved and developed areas, snowmaking, storage, stormwater, channel stability and changes to the rate of LWD recruitment to the channel on the flow regimes and natural hydrograph of Melvin Creek. Again, all plans would need to be completed to the satisfaction of the RM-Water.

In its March 14, 2000 correspondence, NGR acknowledged, accepted and committed to all of the comments and requirements outlined by MELP in its March 2, 2000 letter. During May/June 2000, final revisions to NGR's commitments were developed. At this time, NGR requested assurance that, in light of its commitment to provide detailed plans, strategies, mitigation measures, and monitoring reports to regulatory agencies for approval, and to incorporate those approved measures into the project design at the

appropriate stage, regulatory agencies, specifically MELP, would commit to processing applications and approvals in a timely matter. In its June 21, 2000 letter to NGR, the MELP Regional Office (Kamloops) stated that it would apply due diligence in rendering decisions on completed applications (i.e. applications where all statutory requirements are addressed) within 120 days of receipt of the application. MELP clarified that the 120-day timeframe might be exceeded under certain conditions (e.g. appeal of approved permit, incomplete application, etc.), but that MELP staff would put forth best efforts to ensure approval is achieved in a timely manner.

Public Comments on Issue and Project Committee's Position (6.1.1.1)

1. PUBLIC COMMENT:

Need to address potential for terrain hazards along Melvin Creek.

PROJECT COMMITTEE POSITION:

Terrain hazards which have the potential to affect the resort development have been identified and adequately addressed for EA-level review - see this section for discussion.

2. PUBLIC COMMENT:

Riparian setbacks need to be adequate to protect aquatic systems

PROJECT COMMITTEE POSITION:

Potential impacts on riparian values have been identified and considered in detail during the EA review of the project. Riparian impact concerns arise in the context of various different issues, and are discussed in numerous sections of this report – see, for example, the discussion in this section and in sections: 6.1.1.3 (*Wildfire Design Issues*), 6.2.1.2 (*Liquid Waste Management*), 6.2.2.1 (*Water Supply*), 6.2.3.1 (*Fisheries Resources*), 6.2.3.2. (*Wildlife Resources*), 6.2.3.3 (*Birds*) and 6.3.1 (*Forest Resources*).

First Nations Comments on Issue and Project Committee's Position (6.1.1.1)

No specific comments on geotechnical hazards at the resort were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.1.1.1)

To address geotechnical issues, NGR has committed to the following:

- not apply for or locate any habitable structures within any and all hazard areas (snow avalanche, rock avalanche or slides, floodplain and debris flow), unless site-specific ground-proofing has been carried out, and practical mitigation measures indicating such sites are safe from risk are proposed and accepted by regulatory agencies;
- locate all development outside areas of risk (rockslides, debris flow, and flooding) or above the 1-in-200-year potential flood plain;
- contract registered engineer(s) and/or recognised experts specializing in structural, geotechnical and snow avalanche work to design all structures and mechanisms and

to document ongoing maintenance schedules, inspections reports and filing procedures;

- undertake a site-specific rock fall hazard assessment associated with any accommodation development prior to making applications for land and all subdivision applications;
- complete a two-staged hazard assessment as follows: (1) during the ski area master plan stage, conduct an overall hazard assessment to characterise risk hazard and to identify associated planning recommendations; and, (2) at the time of subdivision application, conduct more detailed site-specific and field-based assessments of development sites. (**Note** - The hazard assessment will address the following: prediction of probable frequency and magnitude of debris flow events, delineation of run-out zones (identifying high-, medium- and low-risk areas), elevation-relief-based mapping of areas at risk, and site-specific setbacks for hazards. The risk mapping is to be applied to the detailed resort layout in the ski area master plan to determine whether any areas must be removed from development, and/or appropriate mitigation measures implemented. The debris flow study, final design, and determination of debris flow and debris torrent protection setbacks are to be undertaken by a qualified geotechnical engineer, and must be provided to the satisfaction of the MELP RM-Water;
- undertake remote monitoring for ground movement (including site-specific hydrological, hydrogeological and geotechnical studies to be submitted with development plans), once access is available to the Melvin Creek valley and prior to any site specific development applications; and,
- employ appropriate engineering design measures to reduce risk when designing in areas of risk for slope movement. Plans are to be provided to the satisfaction of the MELP RM-Water;
- take every effort to maintain/maximize as many riparian-related values as possible in other areas of the valley to replace the wetland areas lost to development for the upper village (**Note** - This is to include preserving other wetland areas in their natural state in order to provide specific wetland capabilities in the Melvin Creek drainage);
- conduct flow monitoring at various locations along Melvin Creek (see NGR's *Water Supply* commitments - section 6.2.2.1);
- provide additional detailed floodplain and channel information during the CASP process (**Note** - This is to include standard site-specific urban planning design details to protect from flood and channel stability hazards, such as vertical and horizontal property setback distances, to ensure that properties are not subject to flooding. Develop site mitigation plans which reflect acceptable engineering practices. All assessments and plans are to be completed to the satisfaction of the MELP RM-Water);
- locate all residential and commercial buildings above the 1-in-200-year flood level, and locate all living space and goods potentially damageable by flood waters 1.5 m or greater above the natural boundary of applicable streams;
- locate all residential and commercial buildings outside the riparian buffer (per DFO's *Land Development Guidelines for the Protection of Aquatic Systems*).
- undertake a hydrological study of the watershed at the CASP stage (see section 6.2.2.1 - *Water Supply*);

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- minimize destabilisation of Melvin Creek by preserving the riparian zone through retention of the existing trees and implementing windfirm design measures along the riparian zone edges, outside the riparian buffer, whenever possible;
- maintain stream bank vegetation wherever possible (**Note** - Plans for any removal of vegetation are to be supplied to the satisfaction of the MELP RM-FWH);
- use soft-engineering habitat-sensitive techniques to protect against erosion, where applicable;
- assess and appropriately engineer stream crossings at the permitting stage to the satisfaction of MELP RM-FWH and MoTH;
- place bridge footings outside the stream bed to minimize impacts to fish habitat;
- detail and finalize the Environmental Management Plan (EMP) and the Environmental Specifications and Conditions (ESC) to the satisfaction of the MELP RM-PP and RM-FWH, prior to construction and adhering to the EMP and the ESC during project construction and operation, and in relation to the EMP completed during the EA review:
 - obtain all environmental approvals, permits and agreements prior to commencement of construction;
 - comply with federal, provincial and local environmental legislation, regulations, permits and approvals during resort construction and development;
 - adhere to the ESC, which has been developed to assist with ensuring compliance with regulatory requirements during construction and operation.
 - determine the environmental conditions and sensitivities of areas that could be impacted by resort infrastructure development including completing any necessary field and secondary source investigations (**Note** - This would include areas inside and outside the development site [e.g. intersections on roads, bus staging areas, sewer lines, gas lines, etc.]);
 - provide to regulatory agencies the following: detailed mitigation measures, time frames, strategies for environmental quality control and risk management, detailed monitoring programs to assure compliance, and criteria for assessing success or failure for each measure, incorporating approved measures into the project design at the appropriate stage;
 - design a water quality sampling program and determine site selection criteria to identify sites which contribute to Total Suspended Solids (TSS) and other contaminants in streams during instream construction activities and other activities that could produce silt runoff;
 - provide strategies for the management of excess materials;
 - define the environmental design requirements and considerations under each of the following activities, as land use, zoning and subdivision development plans are finalized: instream work; clearing and grubbing (including, but not limited to roads, ski trails, ditching, pipeline and other utility works); stripping and grading; burning and slash disposal; gravel excavation; drilling and blasting; construction discharges; erosion and sediment control; and chemical, fuel and oil handling;
 - employ a qualified environmental monitor who will determine compliance with the environmental specifications and terms of approvals and permits (**Note** - This is to be achieved through the monitor providing input to the detailed designs, being on-site during all land clearing and construction activity, and monitoring the success of mitigative measures. The monitor will be given the authority to

suspend construction activities which are causing unacceptable environmental harm, and to prevent environmental degradation until a mitigative solution is established. The monitor will report directly to the designated agency(ies)' contact(s), and act independently from construction management);

- provide an Emergency Response Plan which deals with special waste and dangerous goods spills to DFO and MELP for approval within 15 days after contractor(s) receive notice of award of the contract, and prior to commencement of work (Note - The plan is to follow the provincial *Spill Contingency and Emergency Plan Guidelines* and comply with applicable provincial and federal acts and regulations);
- ensure that contractors provide an Emergency Response Plan and adhere to NGR's Overall Emergency Response Plan;
- ensure contractors comply with conditions of all permits, including providing agency notifications, facilitating agency inspections of the job sites, and complying with specific construction requirements; and
- build the EMP into all contracts, and commit subcontractors to make the EMP part of any works subcontracted; and
- report monitoring results to the appropriate agencies at agreed-upon intervals, to ensure an effective feedback mechanism which allows the results of any monitoring to influence the implementation of any mitigative measures adopted.

Status of Issue at Time of Referral to Ministers (6.1.1.1)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- ***Geotechnical Hazards*** - From a public safety perspective, both the resort and new access road are located in mountainous terrain which is subject to some risk of rockfalls, debris flows and flooding. Measures proposed to avoid development in areas at risk from geotechnical hazards, and to examine and monitor areas where the risk is uncertain, will ensure that project development sites are located in areas which are both geotechnically feasible and safe, with public safety in relation to such hazards ensured.

6.1.1.2 AVALANCHE HAZARD ISSUES
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Issue(s) (6.1.1.2)

The issues identified include the need for a detailed avalanche hazard assessment and an avalanche hazard management plan for the proposed resort.

Content of Application (6.1.1.2)

In section 10 of its application, NGR provided four reports (July 1990; May 1991; September 1992; May 1993) on avalanche hazards in the resort area, prepared by Chris Stethem & Associates. These reports provided assessments of the avalanche hazards in the resort area and along the proposed access road routing, as well as advice for locating the resort facilities and access road alignment in order to minimize those hazards.

Agency Review Comments on Application (6.1.1.2)

SLRD stated that it would need to be satisfied that relevant zoning and building permits could be issued before it could determine whether it supported the proposed resort. Accordingly, SLRD identified several areas of concern which required further study. The most significant of these was avalanche path B2, since the application showed that a portion of the proposed residential development would be located within its potential area of impact. Although NGR proposed to reduce the avalanche risk for this area through skiing activities and avalanche control in bowl B2, SLRD noted that it was unacceptable for a residential area to rely on ski area avalanche control for safety.

SLRD also noted that the avalanche hazard levels identified in the application on the Avalanche Hazard map were at variance with those which SLRD considers safe for residential use. NGR was referred to SLRD's policy on *Hazard Acceptability Thresholds for Development Approvals for Local Government*.

Proponent's Responses to Agency Comments on Application (6.1.1.2)

In a letter dated April 10, 1997, NGR outlined its position with respect to SLRD's concerns with avalanche hazard levels. NGR noted that the SLRD standard for measurement of avalanche hazard addresses 10,000-year time horizons, whereas normally, occurrence levels are estimated to a 1-in-300-year standard. SLRD committed to working with NGR to review its existing policy with respect to snow avalanche hazard acceptability.

Project Report Specifications (6.1.1.2)

Three specifications relating to avalanche control at the resort were included in the project report. The first of these (C.2#1) required that NGR show that the proposed resort will comply with SLRD's criteria for development in snow avalanche areas, as defined in: *Hazard Acceptability Thresholds for Development Approvals for Local Government*. The second specification (C.2#2) was a mapping exercise. It required that the locations of the proposed development areas, including the access road, be overlaid with identified snow avalanche areas at a minimum 1:20,000 scale. The third specification (C.2#3) was conditional, in that, reporting was only required if the terrain hazard risk assessment indicated a significant avalanche hazard in the vicinity of the proposed development or access road. If so, it required that NGR present a conceptual operations plan for monitoring avalanche hazards for public safety. If only a minimal avalanche hazard was identified, this requirement could be left to the permitting stage.

Issue Treatment in Proponent's Project Report (6.1.1.2)

NGR indicated that it reviewed SLRD's development standards and was confident that the project would comply with requirements at the Official Community Plan (OCP) and zoning application levels, with the exception of the disputed snow avalanche hazard levels. NGR and SLRD planning staff have met to discuss this issue and agreed that the standard will need to be revised. These discussions are ongoing.

Included in section 3 of the project report were two new avalanche hazard assessments for the access road (January 1999 and March 31, 1999) prepared by Chris Stethem & Associates. In addition, avalanche hazard assessment information and avalanche-free

zone designations, were plotted on the 1:10,000 Natural Hazards map and 1:20,000 Environmental Constraints map respectively.

NGR acknowledged that the problem identified by SLRD regarding avalanche path B2 and its potential impact on the proposed resort development was due to an error in the way information was presented in the application. The problem has been corrected and avalanche-free zones are now clearly illustrated on the Environmental Constraints map. NGR committed that no building or structures other than lift towers and terminals will be located in any areas of avalanche hazard.

A preliminary operation plan for snow avalanche hazard mitigation was outlined in the project report. Snow avalanche monitoring will be carried out daily by expert avalanche personnel from the lift company and an avalanche control program will be established for all ski/snowboard terrain. Representative sites within the lift system, as well as in the higher elevations, will be selected for evaluating and forecasting avalanche risk throughout the resort. Prediction capabilities will improve with time, as monitoring data are collected and compared with avalanche occurrences.

An emergency response team will be organized by the resort's professional ski patrol and the resort's designated avalanche expert. Due to the high elevation of the valley, no upper mountain restaurants or permanent rescue structures are planned. Rescue equipment will be located at lift terminals for efficient deployment.

It is anticipated that avalanche control will be primarily achieved by on-ground control methods. However, some situations may require other methods, such as helicopter-placed explosives or a projectile control method. Terrain modifications such as diversion mounds and berms are also planned. A detailed snow avalanche control plan for all lift-served terrain will be developed at the post-EA permitting stage, and further refined as experience is gained and the resort expands.

Agency Review Comments on Project Report (6.1.1.2)

In a letter dated October 12, 1999, SLRD indicated its satisfaction with NGR's treatment of the snow avalanche hazard issue. SLRD also noted that avalanche hazard areas and other terrain constraints would be further addressed at the OCP stage of the local government approval process.

Avalanche hazard issues were discussed between SLRD and MoTH on March 21-22, 2000. During that meeting, MoTH expressed concern that its policy with respect to snow avalanche hazards may be inconsistent with that of the SLRD. SLRD noted, in its March 22, 2000 correspondence, that the inconsistency stemmed from the five-level matrix it utilised when determining snow avalanche hazards. However, SLRD also noted that it was the intent of both agencies not to approve proposed development in areas which have been identified to have snow avalanche hazards.

In order to address the inconsistency between itself and MoTH, SLRD concluded that it would avoid designating or zoning avalanche hazard areas for development within an OCP or zoning amendment bylaw. The acceptable limits for assessing the exposure to this type of natural hazard would be consistent with both MoTH and SLRD policies.

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SLRD stated that, where there may be a perceived inconsistency between SLRD hazard policy and another authority's policy, the more conservative approach should apply, as long as it is consistent with industry standards.

Throughout the review, MELP raised the issue of potential impacts to mountain goats associated with avalanche control measures. MELP contended that avalanche control at the resort and along the access road should minimize disturbance to mountain goats while on winter range, or during kidding and early rearing.

Proponent's Responses to Agency Comments on Project Report (6.1.1.2)

During a March 16, 2000 teleconference between NGR, MELP and EAO, NGR committed to developing an avalanche control program which would include appropriate provisions to protect mountain goats. This would include maintaining a sight distance of 2000 m from goats for blasting or helicopter activities. The plan would be developed to the satisfaction of the MELP RM-FWH, MoTH (road component) and SLRD (resort component).

Public Comments on Issue and Project Committee's Position (6.1.1.2)

Members of the public provided no specific comments regarding avalanche hazard issues at the resort.

First Nations Comments on Issue and Project Committee's Position (6.1.1.2)

No specific comments on avalanche hazards at the resort were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.1.1.2)

During the community plan and zoning application stage, the proponent has committed to:

- locate no buildings other than lift towers and terminals in any areas of avalanche hazard (**Note** - Some lift towers and terminals may require protection by either terrain alterations or protective devices);
- co-operate and work with MoTH to establish an avalanche monitoring program for the road which would include:
 - several high-elevation stations within the ski area to forecast upper elevation risks for those avalanche paths which cross the access road;
 - an emergency response team, to be organized solely by the proponent through the Cayoosh professional ski patrol and the resort's designated avalanche expert; and
 - an access road avalanche mapping program;
- develop the avalanche control program to minimize disturbance of mountain goats while on winter range or during kidding and early rearing (**Note** - This includes provisions, as appropriate, to maintain a sight distance of 2000 m from mountain

goats and blasting or helicopter activities. The plan is to be developed to the satisfaction of the MELP RM-FWH and MoTH).

- develop the avalanche control program to minimize disturbance of mountain goats while on the winter range or during kidding and early rearing (i.e. helicopters and blasts 2000 m sight distance away, where possible) (**Note** - The program plan is to provide a mechanism to assess the residual impacts of any disturbance on mountain goats (see mountain goat monitoring issues, discussed in section 6.2.3.2.2), and is to be developed to the satisfaction of the MELP RM-FWH and MoTH, and with the proponent's wildlife consultants);
- during permitting, complete a detailed snow avalanche control program for all skiable terrain, with daily snow avalanche monitoring carried out by expert avalanche personnel;
- implement avalanche control predominantly through the use of 'on-ground' control methods (**Note** - In some situations, helicopter-placed explosives, and possibly a projectile control method or mechanism such as Gaz-Ex exploders, could be required);
- provide avalanche protection through appropriate mitigative designs such as the use of terrain modifications (i.e. diversion mounds and berms) where deemed necessary; and,
- conduct daily assessments for all avalanche paths capable of reaching the valley floor or road, co-ordinated with MoTH avalanche personnel (**Note** - All avalanche control work for the access road will be managed and directed by MoTH).

Note – For convenience, all of NGR's commitments with respect to avalanche hazard issues as they relate to both the resort and the new access road are listed in this section, which otherwise focuses on the resort, rather than being divided between this section and section 6.1.2.2.

Status of Issue at Time of Referral to Ministers (6.1.1.2)

The project committee considers the issue resolved for the purposes of the EA certification decision.

6.1.1.3 WILDFIRE DESIGN ISSUES

Issue(s) (6.1.1.3)

There were two main issues associated with fire management at the proposed resort:

- managing the wildfire hazard at the resort site; and
- consideration of the resort's fire-fighting needs and the implications of project development for existing fire-fighting services.

Water availability for fire-fighting purposes is addressed in section 6.2.2.1 (*Water Supply*).

Content of Application (6.1.1.3)

The issue of wildfire hazard control was not specifically addressed in the application.

Agency Review Comments on Application (6.1.1.3)

MoF expressed concern with the potential for wildfire to impact the resort and the need to consider emergency evacuation. NGR was advised to consider the risk and occurrence of wildfire as a priority design and management issue when planning the resort community. Similarly, when selecting appropriate community road standards, NGR was advised to consider the importance of maintaining the ability to suppress fires and evacuate the public who are at risk.

The Office of the Fire Commissioner (OFC), which oversees fire protection in the province, also recommended that, prior to construction, a wildfire risk assessment be undertaken and fuel loading be reduced to not more than a 'Moderate' rating.

With respect to fire-fighting, OFC commented that ideally, in the interest of public safety, a second access road should be provided to the resort, to provide an emergency evacuation route. OFC made several other recommendations in its March 6, 1997 letter to the EAO, including: using fire retardant materials in building construction, ensuring adequate water supply for fire protection, requiring residential units to be equipped with automatic sprinkler systems, developing fire suppression services at the resort and complying with building and road design standards.

Proponent's Responses to Agency Comments on Application (6.1.1.3)

In a letter to OFC dated May 8, 1997, NGR outlined further details regarding fire protection at the resort. With the exception of the second access road, which it deemed technically and financially unfeasible, NGR indicated general agreement with the suggestions for fire safety management made by OFC.

In a letter dated May 12, 1997, NGR responded to MoF concerns by committing to include a system of ski trail fire breaks that would assist in the protection of the resort against wildfire. NGR also commented that the resort, due to its near sub-alpine location, would not likely be subject to a catastrophic fire, and would thus be able to provide a safe refuge in the case of a wildfire in the region. In its response to OFC concerns, NGR also committed that, prior to construction, a wildfire risk assessment would be completed, and fuel loads would be reduced to no more than a 'Moderate' rating.

Project Report Specifications (6.1.1.3)

There were no further EA reporting requirements for this issue, since the project committee concluded that a second access road to the resort would be technically impracticable, and that any outstanding issues could be addressed at the permitting stage.

Issue Treatment in Proponent's Project Report (6.1.1.3)

No further information regarding wildfire hazard management was provided in the project report.

Agency Review Comments on Project Report (6.1.1.3)

In a letter dated October 19, 1999, MoF indicated that there were no outstanding strategic EA-level concerns with this issue. Since the resort would be buffered by an old burn and avalanche chutes, MoF felt that it would have good natural fire protection. More detailed management of fire protection issues will be needed at the permitting stage. MoF Protection Division requested that NGR contact, and utilise the expertise of, the Lillooet Fire Zone when developing site plan considerations for wildfire.

Proponent's Responses to Agency Comments on Project Report (6.1.1.3)

As no outstanding concerns were identified, NGR provided no further comment on this issue.

Public Comments on Issue and Project Committee's Position (6.1.1.3)

1. PUBLIC COMMENT:

How will NGR reduce fuel loadings, and what will be the impact of measures such as snag removal on wildlife, vegetation and streams?

PROJECT COMMITTEE POSITION:

The project committee considers the issue of fuel loading to be valid, but of a non-strategic nature. Measures are readily available to deal with the issue, which can be effectively addressed by permitting agencies if the project receives an EA certificate. Snag removal would have minimal impact on vegetation and streams. There is a potential for impacts if snags, identified as danger trees, were to be removed from riparian areas. Removal of these snags will reduce the large woody debris available to these streams, which may have an impact on maintaining stream stability. From a wildlife perspective, many snags can be effective wildlife habitat (e.g. for bats and birds). NGR's commitment to leave 'unsafe' snags on the ground in riparian reserve zones to provide habitat for other wildlife species should reduce adverse impacts. Snags need to be assessed by a qualified snag assessor before any removal for safety purposes takes place.

2. PUBLIC COMMENT:

Is the alpine a realistic refuge from wildfire for people? Are the logistical challenges (adequacy of transportation and supplies) manageable?

PROJECT COMMITTEE POSITION:

The project committee has considered wildfire hazard issues in a preliminary manner, and concluded that, since no unusual wildfire risks or challenges are present at the site, this issue had been adequately addressed for EA-level review - see discussion in this section. Wildfire design parameters will need to be factored into the more detailed ski area master plan, which will be prepared under the CASP process if the project receives an EA certificate.

First Nations Comments on Issue and Project Committee's Position (6.1.1.3)

No specific comments on wildfire hazards at the resort were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.1.1.3)

NGR made the following commitments with respect to wildfire design issues:

- complete a wildfire risk assessment prior to construction;
- develop a system of ski trail fire breaks that will assist in the protection of the development and building sites against wildfire; and
- ensure fuel loads are reduced to a moderate rating.
- in riparian areas, leave on the ground any snags that need to be removed for safety purposes, where possible, to provide habitat for wildlife species;
- employ an individual who has completed the 'Wildlife/Danger Tree Assessment Course' and the 'Stand Level Biodiversity Course' to assess snags; and
- if possible, schedule tree falling (and other construction activities) for a time which does not disturb nesting birds.

Status of Issue at Time of Referral to Ministers (6.1.1.3)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Avalanche control* - From a public safety perspective, both the resort and new access road are located in mountainous terrain which is subject to some risk of snow avalanches, as is the case at many of BC's existing ski areas. Avalanche control measures proposed for the roadway and resort area address public safety concerns. Given effective implementation of a public safety program to actively manage this risk, the hazard to the public will fall within normal government expectations for approving a development of this type in BC.

6.1.2 ACCESS ROAD

The access road from Highway #99 to the lower village site is approximately 8.5 km in length, and rises approximately 500 m to the upper valley area. An additional 2 km of road with 200 m of rise leads from the lower village to the upper village. The proposed route traverses cross-slopes that vary in gradient from 25-45 degrees. Thirteen switchbacks are required, mostly between kilometres 3 and 7, where steep cross-slopes are encountered.

6.1.2.1 LOCATION AND DESIGN ISSUES

Issue(s) (6.1.2.1)

The issues identified include the need to:

- review and analyse traffic and highway inventory information for all routes leading to the resort area (refer also to section 6.4.6);
- construct an access road to a design standard which would allow safe passage for the travelling public;

- determine the location of a route which would minimize impacts to the environment, and
- optimise delivery of tasks such as roadway maintenance and operation.

Content of Application (6.1.2.1)

In section 3 of its November 7, 1997 application, NGR provided an undated report, entitled *Cayoosh Resort: Roads and Servicing*, by Kerr Wood Leidal Associates Ltd. (KWL), which pertained to the location and design of the access road. This report included a preliminary overview of the access road route and design assumptions.

Agency Review Comments on Application (6.1.2.1)

In February 1997, MoTH noted the need for more detailed access route information in order to assess its technical feasibility. MoTH requested that a route study be completed which addressed the viability of the route, route hazards and the impact of the road on the environment.

Proponent's Responses to Agency Comments on Application (6.1.2.1)

In May 1997, NGR advised that detailed route information had been completed and that based on this, the original route location (as outlined in the application), with some realignment, remained the preferred siting. NGR noted that the proposed route alignment was determined to be the best option available in the 1992 and 1993 reports by Bruce Geotechnical Consultants. As well, KWL walked the route, and confirmed that it was the preferred route option, since the slope is generally dry, it avoids Melvin Creek in the lower sections, and has the least number of creek crossings.

Project Report Specifications (6.1.2.1)

Although MoTH recognised NGR's efforts to produce additional route information, it was not satisfied with the level of detail provided. The specifications reflected the requirement for NGR to generate further analyses and provide greater detail, rather than needing to produce a significant amount of new information.

The first of the specifications (E.3(B)#1) referred to regional traffic impacts (see section 6.4.6 – *Regional Traffic Effects*). The second specification (E.3(B)#2) required NGR to further discuss and define the requirements of the route study with MoTH. The remaining six specifications for this issue (E.3(B)#3 to #8) related to the access route study and were conditional, in the sense that they were requirements of NGR, except to the extent to which MoTH confirmed in writing that it obtained the information and analyses from other sources. The requirements of these conditional specifications included: mapping of all route alignment options and all associated constraints at a minimum scale of 1:20,000, with larger-scale mapping (i.e. 1:5,000 or 1:2,000) for problem areas; route option plans, with a recommended alignment, design criteria and typical sections; identification of avalanche hazards and risks including operational safety plans to address these issues; an avalanche hazard management plan for the access road; identification of property, land use, and bridge requirements including a preliminary cost estimate for construction and property acquisition; and, an environmental impact overview of the access road with a rating of relative impacts.

Issue Treatment in Proponent's Project Report (6.1.2.1)

The *Cayoosh Resort Access Road Report* by KWL, dated May 26, 1999, was provided in section 3 of the project report. It examined the overall feasibility of the access road. The report outlined the existing physical conditions and constraints affecting the proposed access road, the criteria used to develop the proposed access road design, an outline and discussion of the access road options considered, and a detailed description of the preferred access road option. In addition, preliminary design drawings, an access road alignment (1:5,000 scale) and site maps were included in the report. The access road was also plotted on to NGR's 1:20,000 scale Environmental Constraints and Natural Hazard Maps, included in section 1 of the project report.

The access road options were developed progressively, in collaboration with MoTH, to reach a consensus on design standards. More than a dozen options and sub-options were considered, using various combinations of grades and switchback diameters. The steep terrain provided limited opportunity to meet grade criteria within reasonable construction cost parameters. The final design concept was developed based upon driveability/safety and practical and economic considerations. Although geomorphological and avalanche hazards exist, no hazards were identified which would preclude road construction as proposed.

An independent review of an earlier draft of the KWL report was undertaken by CJ Anderson Civil Engineers Inc. in 1998. The review was incorporated into the March 1, 1999 BHA study, commissioned on project feasibility by the EAO – see section 5.8 for discussion. This review concluded that, subject to certain MoTH technical requirements, the access road design concept was reasonable and technically possible. After that review was completed, KWL and Ainsworth Lumber Co. Ltd. undertook significantly more design work, which was documented in the project report.

The KWL report also confirmed that Ainsworth will construct a logging access road to the upper Melvin Creek valley along roughly the same alignment as the permanent resort access road. The logging road will be steeper than the permanent route, and will be able to avoid all but four switchbacks. In order to minimize the environmental impacts of access road bridge construction, certain design features will be incorporated into the single-lane logging road bridges in order to facilitate subsequent replacement with permanent two-lane bridges for the resort access road. Aside from providing logging access for Ainsworth, the road will allow for construction access to the proposed resort prior to completion of the permanent access road.

The KWL report identified the avalanche hazard and related risk levels, mitigation, and operational safety measures for the access road. Chain-up areas and storage locations for snow, salt and sand were also identified. Additionally, a *Preliminary Plan for Snow Safety Operations* by Chris Stethem and Associates (March 1999) was included with the KWL report.

Property and land use for the access road and bridges were identified in the KWL report. Since all the affected property is provincial Crown Land, and the proposed access road would become part of the provincial road system, there is no associated acquisition cost.

The construction costs of the access road were also estimated and included in table format.

Environmental impacts from the access road were identified as part of the June 1999 *Wildlife Habitat and Vegetation Assessment* prepared by Wildeor Wildlife Research and Consulting and LGL Ltd. environmental research associates, submitted as section 5 of Volume 1 of the project report. An environmental impact overview specifically for the access road was developed by Wildeor, KWL, Arc Environmental Ltd. and NGR, and was included as part of section E in Volume 2 of the project report. A summary table was included which rated the various potential environmental, heritage and socio-economic impacts and their relative significance ratings for each kilometre of the access road.

Agency Review Comments on Project Report (6.1.2.1)

In a letter dated October 15, 1999, MoTH indicated its satisfaction with the information and design concept plans provided in the project report. Subject to NGR meeting the commitments and standards described in the project report and supplemental documents, and recognizing that more detailed information will need to be provided during subsequent permitting stages, MoTH's requirements for addressing this issue have been met. Furthermore, it was understood that future design work at subsequent stages would refine more detailed information on impacts and costs of the access road. This would be in line with other roadway projects that MoTH had undertaken across the province.

In its November 1, 1999 letter, MELP noted some outstanding concerns with the potential environmental impacts of the access road. MELP specifically requested that NGR confirm that the identification of gravel pits in the Melvin Creek valley would not interfere with the selection of a sewage disposal area. Further, MELP stated that salt-contaminated drainage should not be discharged to the environment but rather, should be used for dust control on gravel roads or other similar uses.

Regarding potential impacts of the access road on wildlife habitat, MELP requested further explanation of the rationale used for locating the road alignment. Finally, MELP noted that it concurred with the mitigation proposed in the project report to avoid or minimize access road impacts, but further recommended that any snowsheds be designed to allow for use as wildlife crossing structures.

Proponent's Responses to Agency Comments on Project Report (6.1.2.1)

In its February 28, 2000 correspondence, NGR provided a detailed rationale for the location of the proposed access road alignment. NGR explained that the need to consider ski area design issues, avalanche hazards and riparian setbacks, left little flexibility for locating the upper road. The final locations for the road within the upper village and access road bridges would be determined after a more detailed base area plan is submitted during the post-EA CASP review process. The final bridge locations would be identified by assessing bank stability and other environmental issues in consultation with MELP.

Follow-up Exchanges (6.1.2.1)

MELP, in its March 1, 2000 correspondence, stated that NGR had provided adequate rationale for the road alignment. However, MELP also noted that NGR had not discussed whether any snowsheds constructed for the access road would be designed to allow for wildlife crossing. MELP requested confirmation of NGR's intentions regarding this issue. On March 15, 2000, NGR clarified that no snowsheds are proposed in the avalanche protection program.

Public Comments on Issue and Project Committee's Position (6.1.2.1)

1. PUBLIC COMMENT:

Terrain hazards along access road will mean potentially unsafe conditions for travellers.

PROJECT COMMITTEE POSITION:

NGR's consultants identified and evaluated a range of significant terrain hazards along the proposed access road. It is normal to encounter avalanche and rock slide hazards along access roads to ski resorts in BC. There are no unusual circumstances in this case, and the project committee is satisfied that suitable measures are available to avoid or manage them - see the discussion in this section and section 6.1.1.2 (*Avalanche Hazard Issues*).

2. PUBLIC COMMENT:

Road access should not be installed for the project until the project's environmental effects (e.g. wildlife impacts, waste disposal) have been assessed and found acceptable.

PROJECT COMMITTEE POSITION:

The project committee agrees with this point. Under the EA Act, no construction can commence until the EA review is complete and the project has been granted an EA certificate. The project committee has ensured that, where environmental studies have been needed to evaluate whether or not key impact concerns are resolvable, those studies have been completed. The potential environmental impacts of the project have been assessed in detail, and are discussed in various sections of this report. The project committee is satisfied that the identified environmental effects can be effectively managed, providing that NGR complies with conditions imposed in government approvals, and with its own commitments. There are cases where further environmental studies will be a condition of EA certification, if granted. In most cases, these studies are needed to further refine NGR's impact mitigation and/or compensation measures.

First Nations Comments on Issue and Project Committee's Position (6.1.2.1)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA Engineering (UMA).

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc

Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The second section of the report evaluated, from the perspective of the St'at'imc communities, the transportation-related impacts of the resort development. The resort access road was included in the discussion.

1. FIRST NATIONS ISSUE:

The main access road-related concerns identified in UMA's report concerned the level of service under which the access road would operate. The road's shoulders appeared to be too narrow to allow for a disabled vehicle to pull completely off the road. Steep grades would severely reduce speeds, especially for delivery vehicles, while the steep grades and sharp curves would also limit opportunities to pass slow-moving vehicles. These issues relate to the quality of access road operation, and since they would affect resort-users and employees primarily, were not deemed significant.

PROPONENT RESPONSE:

In the steeper climbing sections of the access road, there would not be sufficient width for a disabled vehicle to park on the road shoulders. To create the width suggested would require a significant cut on steep side-hill terrain, with significant cost and environmental impact implications. Since the road will never be considered as access to lands beyond Melvin Creek, and would only provide access to the resort, the design standards were deemed to be appropriate and, as UMA agrees, are not a significant issue.

PROJECT COMMITTEE POSITION:

The project committee acknowledges that the access road to the Cayoosh resort will be constructed through challenging terrain, but is satisfied that design issues have been adequately addressed at the conceptual level. Further refinement of the design concept presented will be part of the final design process. Pullouts for slow moving vehicles, chain up areas and runaway lanes have been addressed by the proponent for safety reasons. Truck and service vehicle turning movements were considered when designing switchbacks (i.e. sharp curves) on the roadway, while the minimum 1-m shoulder width has developed by balancing traffic safety with increased road footprint effects on the landscape. Further analysis of design elements will occur during the final roadway design stage, prior to roadway construction.

Proponent's Commitments Relevant to Issue (6.1.2.1)

In order to further address access road location and design issues, NGR committed to:

- minimize damage to fish habitat by placing bridge footings outside the stream bed on Cayoosh Creek;
- finalize detailed route engineering, following EA certification (and prior to CASP approval);
- abide by the necessary mitigation forthcoming from the application for a NWPA approval.

Status of Issue at Time of Referral to Ministers

The project committee considers the issue resolved for the purposes of EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- **Road access** – Providing public highway access to the resort will be technically challenging because of the difficult terrain in lower Melvin Creek. Working with MoTH, MoF and the local timber licensee (Ainsworth), NGR has developed an access road location plan and design which is acceptable to MoTH.

6.1.2.2 AVALANCHE AND TERRAIN HAZARD ISSUES
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Issue(s) (6.1.2.2)

The issues identified included:

- avalanche and terrain conditions along the existing road;
- preliminary assessment of avalanche and terrain hazards;
- the need for a detailed avalanche and terrain hazard assessment; and
- the need for an avalanche hazard management program for the access road.

Content of Application (6.1.2.2)

The 1992 report by Bruce Geotechnical Consultants Inc., *Preliminary Assessment of Terrain Hazards*, submitted as section 9 of NGR's application, addressed the proposed access road. The report concluded that construction costs would be high, due to steep cross-slopes and grade restrictions, but that there was no evidence of deep-seated landslides, and the proposed access route was the best available option. These conclusions were confirmed in the 1993 Bruce Geotechnical Consultants Inc. report, *Assessment of Terrain Hazards - Proposed Cayoosh Resort*.

Avalanche hazard assessments undertaken by Chris Stethem and Associates in 1990, 1991, and 1993, entitled *Avalanche Hazard Assessment for the Cayoosh Resort Proposal and Avalanche Hazard at Access Road to Cayoosh Resort Development and Proposed Cayoosh Resort – April 17, 1993 Field Trip* respectively, addressed the proposed access road, and were included in section 10 of the application. These reports provided assessments of the avalanche hazards potentially affecting the proposed access road, as well as advice for locating the access road alignment in order to minimize those hazards.

Agency Review Comments on Application (6.1.2.2)

In a letter dated April 15, 1997, MoTH identified concerns with respect to the avalanche and general terrain hazards along the proposed access route. MoTH requested that these concerns be addressed in a route study for the proposed access road (refer to section 6.2.1.1 for discussion). Although the level of detail required for the route study would be less than that which will be needed for the subsequent CASP stage, MoTH required that it be sufficient to allow the feasibility of the proposed road access to be evaluated on the basis of objective technical and economic information.

Proponent's Responses to Agency Comments on Application (6.1.2.2)

NGR responded to the concerns identified by MoTH in a letter dated May 15, 1997. NGR reiterated the investigative work that had been done to date on the access road route by its consultants: KWL, Bruce Geotechnical, and Chris Stethem & Associates. It was pointed out that the restrictions imposed by the steep, rugged terrain and avalanche hazards severely limited the options for the access road route, and that there was general agreement amongst the various consultants as to which access route location was best. NGR indicated that the detail provided to date was adequate for an EA-level review, and that further detailed study should be deferred to the post-EA CASP review.

Project Report Specifications (6.1.2.2)

Both of the specifications for this issue were conditional, in that they were requirements imposed on NGR except to the extent to which MoTH confirmed in writing that it obtained the information and analyses from other sources. MoTH noted that the geotechnical and avalanche hazard information which had already been documented together with that which was further required for the resort development area (see section 6.1.1.2 for discussion) could be used to assist in determining the preferable access route alignment.

The first conditional specification (E.3(A)#1) required that an assessment of risks associated with avalanche hazards be completed for the access road, as part of the overall terrain hazard assessment referenced in section 6.1.1.1. The second specification (E.3(A)#2) required that all of the information and analysis stipulated in the specifications relating to avalanche control at the resort (see section 6.1.1.2 for discussion) be undertaken for the access road.

Issue Treatment in Proponent's Project Report (6.1.2.2)

Included in Volume 1, section 3 of the project report were two new avalanche hazard assessments for the access road (dated January 1999 and March 1999) prepared by Chris Stethem & Associates. The January 1999 report, entitled *Cayoosh Resort: Melvin Creek Access Road Avalanche Hazard Control*, outlined the specific avalanche hazards, as well as the proposed mitigation techniques for each specified section of the proposed access road. The March 1999 report, entitled *Melvin Creek Road Preliminary Snow Safety Operations*, summarized the snow avalanche safety requirements for the proposed access road, including: avalanche terrain, avalanche control measures, personnel needs and operational procedures with respect to avalanche forecast.

In addition, the KWL report included a map (Figure 4-1) which detailed the proposed alignment of the access road, the avalanche hazards affecting the route, and their significance rating (low, moderate or high), and the location of proposed road protection measures. Avalanche hazard assessment information for the proposed access road was also included on the Natural Hazards and Environmental Constraints maps in section 1 of the project report.

Agency Review Comments on Project Report (6.1.2.2)

In a letter dated August 3, 1999, MoTH noted that, subject to several outstanding items of correction and/or further clarification, the project report met the needs of MoTH as outlined in the specifications regarding snow avalanche hazards associated with the proposed access road. Furthermore, MoTH was satisfied that detailed design and control issues noted in the August 3, 1999 letter would be addressed when additional information was available at the more detailed, post-EA design stage. Specifically, these issues included: (1) avalanche deflection mounds and berms would be required at Path 40.1; (2) runaway lane at station 0+780 must be designed so that it does not compromise the effectiveness of the avalanche deflection berm; and (3) 'road protection works' may be required to protect the bridge adjacent to Path 2.9.

MoTH reiterated in a letter dated October 15, 1999 that, subject to NGR meeting the road standards outlined in the project report and the items outlined in the MoTH letter of August 3, 1999, the project report satisfied its requirements.

Proponent's Responses to Agency Comments on Project Report (6.1.2.2)

Since no outstanding concerns were identified, NGR provided no further comment on this issue.

Public Comments on Issue and Project Committee's Position (6.1.2.2)

1. PUBLIC COMMENT:

Access road could be impacted by avalanches.

PROJECT COMMITTEE POSITION:

NGR's consultants have identified various avalanche hazard areas along the proposed access road. Such hazards are typical along access roads to ski resorts in BC, and there is much experience in managing them. No unusual avalanche hazard issues were raised in this case. The project committee is satisfied that these concerns have been adequately addressed for EA-level review purposes - see this section and section 6.1.1.2 (*Avalanche Hazard Issues*). Further consideration of the issue will be required at the next, more detailed, stage of project planning, if the project receives an EA certificate, to refine avoidance and/or hazard management measures.

2. PUBLIC COMMENT:

Will MoTH incur increased maintenance costs to keep Duffey Lake and Melvin Creek roads open in winter?

PROJECT COMMITTEE POSITION:

The province (MoTH) would retain ownership of the access road and assume responsibility for the associated maintenance activities. MoTH would also be responsible for any increased winter maintenance on Highway #99 that it deemed necessary. Some increased costs would be expected.

First Nations Comments on Issue and Project Committee's Position (6.1.2.2)

No specific comments on avalanche and terrain hazards along the access road were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.1.2.2)

Refer to section 6.1.1.2 - Avalanche Hazard Issues for a list of all commitments related to avalanche hazards, including those along the access road.

Status of Issue at Time of Referral to Ministers (6.1.2.2)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- ***Geotechnical Hazards*** - From a public safety perspective, both the resort and new access road are located in mountainous terrain which is subject to some risk of rockfalls, debris flows and flooding. Measures proposed to avoid development in areas at risk from geotechnical hazards, and to examine and monitor areas where the risk is uncertain, will ensure that project development sites, including the access road, are located in areas which are both geotechnically feasible and safe, ensuring public safety in relation to such hazards.
- ***Avalanche control*** - From a public safety perspective, both the resort and new access road are located in mountainous terrain which is subject to some risk of snow avalanches, as is the case at many of BC's existing ski areas. Resort and road location and design efforts, coupled with avalanche control measures proposed for the roadway and resort area, will ensure that development is sited in technically feasible locations which address public safety concerns. Given effective implementation of a public safety program to actively manage avalanche risk, the hazard to the public will fall within normal government expectations for approving a development of this type in BC.

6.2 ENVIRONMENTAL EFFECTS

6.2.1 WASTE MANAGEMENT

6.2.1.1 SOLID WASTE MANAGEMENT

Issue(s) (6.2.1.1)

The issues identified include

- the proposed location, design and functioning of solid waste collection, treatment and disposal facilities;
- potential environmental impacts of solid waste disposal and available mitigation options;
- arrangements to use the Lillooet landfill, and required improvements to the landfill site; and
- use of animal-proof containers to prevent wildlife/human conflicts.

Content of Application (6.2.1.1)

Solid waste was briefly mentioned in the [undated] *Roads and Servicing Report* by KWL, submitted as section 3.9 of NGR's November 7, 1996 application. This report recommended that solid waste be collected and compacted at a resort-based facility, and trucked to an existing landfill for disposal. The report acknowledged that such disposal would have to be negotiated with SLRD.

Agency Review Comments on Application (6.2.1.1)

In its letter dated February 25, 1997, SLRD noted that the proposal to transfer municipal solid waste from the resort to an existing landfill, as outlined in the application, was consistent with SLRD's waste management plan. However, the increase in solid waste volume generated from the resort would raise the status of the Lillooet landfill to that of a 'sanitary landfill', which would, in turn, require a new operational plan. SLRD requested that NGR provide further information with respect to solid waste management, including: (a) improvements to the Lillooet landfill needed to meet the criteria for sanitary landfill status; (b) method of financing the required improvements; (c) description of the temporary solid waste storage facility, which needed to be accessible, safe, and minimising wildlife/human contact; and (d) any programs proposed for reducing, reusing or recycling solid waste at the resort.

In its February 25, 1997 letter, MoH identified the potential impacts to human health from improperly managed solid wastes. MoH requested that NGR provide further information pertaining to its proposed methods to manage and dispose of residential, commercial and village wastes from the resort development.

MELP requested additional information pertaining to solid waste management at the proposed resort in its February 24, 1997 correspondence. First, MELP requested that NGR confirm whether solid waste would be disposed of on-site, or at an existing SLRD landfill. If the former, NGR would be required to submit further details describing how the proposed site would meet the *Landfill Criteria for Municipal Solid Waste*. If the latter, NGR would be required to discuss the resort's plans for solid waste management with SLRD, and forward the results of those discussions, together with a more detailed proposal for the disposal of solid wastes. MELP would also expect that any solid waste management plan would incorporate predator-prevention techniques and methods to reduce, reuse and recycle the resort's refuse.

MELP also noted a concern with the potential impacts of equestrian activities proposed for the resort. Of particular concern was the potential impact of horse manure on water quality. MELP requested that NGR confirm whether equestrian activities would be part of the resort proposal, and if so, to describe how potential impacts would be minimized.

Proponent's Responses to Agency Comments on Application (6.2.1.1)

A report prepared by Urban Systems Ltd. entitled *Supplemental Information to the Roads and Servicing Appendix* (April 1997) was submitted by NGR on April 24, 1997. It provided further detail regarding the proposed management of solid waste from the resort, including destination, temporary storage and transport, waste reduction, recycling and special wastes.

In addition, NGR filed three separate responses on April 10, May 8, and May 15, 1997 to comments submitted by SLRD, MoH, and MELP respectively. In these responses, NGR noted that it would not be disposing of solid waste on-site at the resort, and that it would accept terms and conditions consistent with SLRD's management strategy for the Lillooet landfill. Further, NGR committed to implementing a reducing/recycling program and storing solid waste at one predator-proof collection facility which would compact refuse prior to transportation. A detailed solid waste management plan, which would identify all criteria to meet provincial standards, would be submitted during the post-EA permitting stage.

NGR noted in its May 15, 1997 correspondence that equestrian activities were not a necessary component of the resort proposal, and that if MELP deemed it an unmanageable activity, it would be withdrawn. NGR noted that, if equestrian activities were permitted, trails would be located on dry slopes away from ecologically sensitive areas, with severe restrictions on the number of horses kept at the resort (<10) and the months of operation (July-September). Further, NGR committed to submit a trail and corral plan to MELP prior to initiating any equestrian activities.

Project Report Specifications (6.2.1.1)

The Project Committee determined that all EA-level issues had been addressed and that further detailed planning could be achieved at the post-EA permitting stage.

Issue Treatment in Proponent's Project Report (6.2.1.1)

Although not requested to do so, NGR included a discussion of its proposed solid waste management plans in its project report (Volume 1, section 4.4). This information was essentially the same as that provided in the April 1997 Urban Systems Report.

Agency Review Comments on Project Report (6.2.1.1)

In its November 1, 1999 correspondence, MELP requested that NGR commit to working with the SLRD to provide an acceptable Solid Waste Management Program, including a requirement to provide bear-proof garbage containers.

Proponent's Responses to Agency Comments on Project Report (6.2.1.1)

In its letter dated January 12, 2000, NGR made several commitments with respect to solid waste management as follows: (a) to provide animal-proof storage and compacting facilities; (b) to provide for the safe temporary storage and transport of solid waste from the resort; (c) to implement waste reduction programs which are consistent with those in effect in other areas of the SLRD; and (d) to work with the SLRD to implement a special waste program and an acceptable Solid Waste Management Program.

Follow-up Exchanges (6.2.1.1)

MELP provided some minor wording changes to these commitments in its January 26, 2000 comments, but identified no further substantive concerns with this issue.

Public Comments on Issue and Project Committee's Position (6.2.1.1)

1. PUBLIC COMMENT:

Is there a possible eventual need for an on-site landfill to dispose of garbage?

PROJECT COMMITTEE POSITION:

Solid waste disposal will occur off-site at a designated regional facility. The project committee determined that this issue was satisfactorily addressed for EA-level review purposes - see this section.

2. PUBLIC COMMENT:

How will wildlife be protected from garbage-related conflicts with people?

PROJECT COMMITTEE POSITION:

The project committee is satisfied that garbage-related wildlife/human conflicts have been adequately addressed for EA review purposes (e.g. animal-proof storage and compacting facilities will be required) - see this section for discussion.

First Nations Comments on Issue and Project Committee's Position (6.2.1.1)

No specific comments on solid waste management were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.2.1.1)

NGR made the following commitments to further address solid waste management issues:

- develop waste recycling and reduction plans in accordance with the requirements mandated by SLRD by-laws;
- accept the terms and conditions for SLRD's management strategy for the Lillooet Landfill;
- identify all criteria to meet provincial standards during the ski area master plan design stage, if the Lillooet Landfill is to be considered (**Note** - If the landfill requires modification, then NGR will enter into an agreement with SLRD to cover those incremental costs identified by SLRD);
- work with the SLRD to develop and implement a special waste program and to include the resort in the Regional Solid Waste Management Plan;
- work with the SLRD to develop a public education program for special wastes and dangerous substances handling and disposal;
- install animal-proof garbage containers and storage facilities;
- develop public information programs on littering and garbage disposal;
- collect residential garbage from a central site located below the lower village site;
- collect commercial garbage from each building in an animal-proof manner, and compact within the resort prior to disposal;
- reduce any impacts by only operating equestrian activities from July to mid-September (**Note** - No horses would be present during the late fall to spring period);

- locate riding trails on dry slopes (**Note** - Trails would be located to avoid all areas of environmental sensitivity and areas where human activity and wildlife interest conflict); and,
- refer its applications to MELP on any trail and corral plans (**Note** - Equestrian facilities will be required to comply with the *Agricultural Waste Control Regulation* and its associated Code of Practice).

Status of Issue at Time of Referral to Ministers (6.2.1.1)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Waste disposal* - Proposed waste disposal systems are satisfactory and environmentally acceptable. The solid waste disposal scheme can be accommodated within regional solid waste disposal systems and objectives.

6.2.1.2 LIQUID WASTE MANAGEMENT
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Issue(s) (6.2.1.2)

The issues identified included:

- the proposed location, design and functioning of liquid waste collection, treatment and disposal facilities;
- the adequacy of capacity and site suitability of the disposal site options;
- the potential environmental impacts of liquid waste disposal and available mitigation options; and
- the collection, treatment and disposal of stormwater and urban drainage.

Note - While there is some overlap between the issues addressed in this section and in section 6.2.1.4 (*Water Quality Issues*), most discussion of liquid waste management and stormwater/urban drainage issues is presented in this section.

Content of Application (6.2.1.2)

The sanitary sewage system was discussed in the [undated] *Roads and Servicing Appendix* prepared by Kerr Wood Leidal Associates Ltd. (KWL), and found in section 3.9 of NGR's November 7, 1996 application. A preliminary description of the proposed sewage collection, treatment and disposal system was provided.

There was no detailed information regarding stormwater or urban drainage provided in the application. The KWL report included a brief section on drainage which noted the objective of minimising the impact of development on the natural drainage systems.

Agency Review Comments on Application (6.2.1.2)

In a letter dated February 24, 1997, MELP stated that the liquid waste management information provided in the application was inadequate to address this issue, and that additional information would be required. Specifically, MELP required information confirming that the process and site(s) chosen were capable of operating successfully

for the anticipated size of population of the resort, and during the worst-case scenarios of climate and demand on the system.

Similarly, more detailed information regarding liquid waste treatment and disposal for the proposed resort was requested by MoH, SLRD, DFO and DoE in their respective review comments on the application.

MELP also indicated in its February 24, 1997 letter that NGR needed to provide further detailed information regarding urban and stormwater drainage. Identification of areas of soil disturbance and the development of a drainage plan for the proposed resort were noted as being necessary to address this issue.

Proponent's Responses to Agency Comments on Application (6.2.1.2)

In April, 1997, NGR provided a supplement to the Roads and Servicing Section of the application prepared by Urban Systems Ltd. Further details pertaining to the wastewater system, runoff and stormwater drainage were provided. This supplemental information also included an April 17, 1997 report by EBA Engineering Consultants (EBA), entitled *Groundwater Potential and Secondary Effluent Disposal Evaluation: Cayoosh Resort, Melvin Creek, BC*, which identified potential areas for in-ground disposal of secondary-treated sewage effluent. A second EBA report, *Evaluation of Potential In-Ground Secondary Effluent Disposal Areas: Cayoosh Resort*, dated July 21, 1997 was also submitted by NGR. The purpose of the July report was to ground-truth the terrain mapping results and geological survey information used in the April 1997 report, and to estimate the permeability of the soils located within the valley bottom near Melvin Creek.

In the Urban Systems supplemental document, the need for the development of a Master Drainage Plan prior to construction was recognised. Also included were the potential objectives of this plan, as well as background information pertaining to the potential for property damage and adverse environmental impacts related to stormwater runoff.

Project Report Specifications (6.2.1.2)

Based upon the information provided in the application and the EBA report, neither MELP nor DoE were able to conclude that an area of adequate size or suitable soil characteristics for the in-ground disposal of liquid waste had been confirmed. NGR noted that, if a suitable area for in-ground discharge could not be located, other suitable technologies for waste treatment and disposal could be utilised. Subsequently, NGR was required to provide a conceptual plan for liquid waste collection, treatment and disposal. This plan needed to further investigate available options for liquid waste management, identify the preferred option and demonstrate that it was capable of functioning successfully at full project build-out (D.1(B)#1 to #3). If in-ground disposal was determined to be the preferred choice, NGR was required to provide a hydrogeological/geotechnical study which demonstrated that there was sufficient area of suitable quality for liquid waste treatment and disposal (D.1(B)#6). NGR was also required to confirm whether SLRD would be the ultimate owner of the liquid waste management system, and thereby, responsible for its operation and maintenance (D.1(B)#4).

NGR was also required to provide a conceptual plan for the handling of all non-point source drainage discharges from the resort, including the ski runs, lifts, roads and residential and commercial areas (D.1(B)#5).

Issue Treatment in Proponent's Project Report (6.2.1.2)

In Volume 1, section 4.2, NGR outlined the preferred option for sewage collection, treatment and disposal. This preferred option included a conventional gravity collection system, a mechanical-type treatment plant, and a rapid infiltration disposal system. NGR indicated that the treatment plant would be located at the resort, as would the disposal area, if subsequent field investigations confirmed the suitability of the site. If, upon further testing, the site proves to be unsuitable, an alternative disposal site was identified near the confluence of Melvin Creek and Cayoosh Creek. In the event that this alternative disposal site is utilised, the preferred location for the treatment plant would still be at the resort, and liquid waste would be transported via a gravity pipeline buried along the access road right-of-way. This alternate disposal site was the subject of a March 1998 report by EBA, entitled *Hydrogeological Assessment - Cayoosh Resort, Melvin Creek, B.C.* which was included in section 4.2 of the project report. A field investigation of the area was conducted which included test pits and infiltration tests. The EBA report concluded that the alternative disposal site located at the confluence of Melvin Creek and Cayoosh Creek had good potential as an effluent discharge site for the proposed resort.

Also in section 4.2 of the project report, NGR formally acknowledged that the sanitary sewer system would be owned by the SLRD. NGR also noted that, although SLRD would be responsible for the operation and maintenance of the system, various forms of partnership between NGR and SLRD would be available to permit efficiencies in the first years of operation.

In Volume 1, section 4.3, NGR acknowledged the need for a Master Drainage Plan prior to commencement of construction at the resort. NGR also outlined the technical objectives of the Master Drainage Plan and described proposed design criteria of the stormwater management system.

Agency Review Comments on Project Report (6.2.1.2)

In separate letters, each dated October 12, 1999, both DoE and DFO noted that the information provided in the project report was insufficient to demonstrate that the sewage treatment and disposal system, including the alternate site, was acceptable. In the absence of the necessary site investigations to prove the acceptability of the proposed disposal sites, DoE and DFO required a commitment from NGR that tertiary treatment would be utilised, if after further investigations, it is deemed necessary by regulatory authorities. While the commitment made by NGR in the project report to meet the requirements of the *BC Municipal Sewage Regulation* was recognised, DoE indicated that this commitment must also include meeting section 13 of the regulation wherein more stringent or additional standards must be met, should environmental impact studies indicate the need for such. DoE also emphasised that meeting the BC Regulation would not ensure compliance with the federal *Fisheries Act*.

MELP, in its letter dated November 1, 1999, noted that while in general, sewage treatment and disposal issues have been adequately addressed, the agreements reached between MELP and NGR are not adequately reflected in the project report. MELP indicated that, if the sewage disposal site was to be located in the Melvin Creek alluvial fan (alternate site), then advanced secondary treatment 10/10 (BOD and TSS levels of less than 10 mg/l) would be required. However, if the disposal site is located in the upper Melvin Creek valley (preferred site), then an environmental impact study, as required by the *BC Municipal Sewage Regulation*, would determine the required level of treatment.

MELP required that NGR commit to at least advanced secondary treatment (10/10) for the disposal site in the upper Melvin Creek valley, unless additional information is provided which would allow for only secondary treatment. NGR was also required to commit to advanced secondary treatment (10/10) for the disposal site located in the Melvin Creek alluvial fan, with the need for disinfection and nutrient removal to be based on the findings of an environmental impact study, as required by the *BC Municipal Sewage Regulation*.

Proponent's Responses to Agency Comments on Project Report (6.2.1.2)

NGR provided further information pertaining to liquid waste in its January 12, 2000 correspondence. In this document, NGR listed a series of commitments pertaining to liquid waste management which were aimed at specifically addressing the November 1, 1999 MELP comments. NGR also provided a direct response to the concerns raised in DFO's October 12, 1999 letter. NGR confirmed that ground disposal was the preferred option, but explained that it would not select the final discharge locations or wastewater treatment system until the technical feasibility of the disposal options were known. NGR noted that the Ecofluid system used at Sun Peaks Resort was an example of a successful sewage treatment system that produced high quality effluent with capabilities for fluctuating flow volumes. NGR further noted that, if a wastewater disposal site could not be located in the upper valley, a site in the Melvin Creek fan would be pursued. In this case, a pipeline would transport the waste from the upper valley to the disposal site. It would be aligned with the main access road for much of its length to minimize further impacts.

Follow-up Exchanges (6.2.1.2)

MELP provided a further response to the liquid waste issues on January 26, 2000. Generally, MELP did not raise any new concerns, but merely requested specific additions or revisions to the wording of NGR's latest (January 12, 2000) liquid waste management commitments.

In separate letters, each dated March 10, 2000, DFO and DoE noted outstanding concerns with respect to liquid waste management. Since NGR had provided no direct response to the concerns raised by the federal agencies in their respective October 12, 1999 letters, both DFO and DoE reiterated those concerns as well as the commitments required of NGR to address them. Together, the federal requirements included committing to: (a) meeting section 13 of the *BC Municipal Sewage Regulation*; (b) completing necessary site investigations, and providing data to confirm whether soils would handle the proposed volume of effluent and whether treatment levels would be

adequate; (c) undertaking disinfection, nutrient removal and contaminant removal if studies indicate the need; and (d) developing and implementing tertiary treatment if advanced secondary treatment is found to be inadequate. Additionally, NGR was requested to commit to meeting the requirements of section 36(3) of the *Fisheries Act* and section 35(1) of the *Migratory Bird Regulations* under the *Migratory Birds Convention Act* if effluent were to be discharged into a waterbody.

In its March 14, 2000 response to DoE concerns, NGR committed that the project would meet and comply with section 13 of the *BC Municipal Sewage Regulation*, section 36(3) of the *Fisheries Act* and section 35(1) of the *Migratory Bird Regulations* under the *Migratory Bird Convention Act*. In its March 20, 2000 correspondence, DoE noted that its concerns with respect to liquid waste management had been addressed.

NGR's commitments were finalized through a series of discussions in May/June 2000. The final issue to be resolved related to the level of sewage treatment to which the proponent should commit. MELP expressed concern that any ground disposal sites existing in the upper Melvin Creek valley may only be marginally acceptable. NGR committed to adopt advanced secondary (BOD & TSS less than 10 mg/l) as the minimum level of sewage treatment if the Melvin Creek fan location is selected for rapid infiltration disposal. However, if alternate sites closer to the resort are selected, NGR committed to achieve wastewater quality consistent with MELP municipal sewage regulations. Although MELP indicated that it was not confident that the required level of secondary treatment will be sufficient for this small pristine watershed, it agreed that taken as a whole, NGR's finalized commitments were sufficient to address liquid waste management issues for EA review purposes. An acceptable liquid waste disposal scheme has been identified which will accommodate full resort build-out, while, if the project is granted an EA certificate, there will be adequate opportunity to investigate the suitability of other possible sites during the permitting stage.

Public Comments on Issue and Project Committee's Position (6.2.1.2)

1. PUBLIC COMMENT:

Need to ensure that sewage/wastewater treatment/disposal effectively prevents negative impacts to water quality and downstream fisheries values.

PROJECT COMMITTEE POSITION:

The project committee required NGR to demonstrate that an environmentally acceptable liquid waste disposal scheme can be developed to accommodate resort needs at full build-out. NGR has identified and proven up an acceptable ground disposal site on the lower Melvin Creek fan. The project committee is satisfied that liquid waste collection, treatment and disposal issues have been adequately addressed for EA review purposes - see this section for a detailed account of the review of the issue. If, as indicated, NGR continues to explore other ground disposal site options, and this leads to a proposal to relocate the disposal field, the new site would be subject to further detailed review and approval requirements.

2. PUBLIC COMMENT:
How will stormwater discharges be treated?

PROJECT COMMITTEE POSITION:

NGR has committed to provide a Master Drainage Plan at the post-EA permitting stage, if the project receives an EA certificate. The project committee is satisfied that stormwater and drainage information provided by NGR is sufficient for EA review purposes.

3. PUBLIC COMMENT:
What volumes of drainage will parking lots contribute to urban runoff?

PROJECT COMMITTEE POSITION:

Based on the conceptual-level information provided by NGR with respect to stormwater and urban drainage management, the project committee does not expect parking lot runoff to raise any special concerns, and has not requested quantitative information of this type at the EA stage of project planning. Overall, the project committee is satisfied with NGR's stormwater and urban drainage management planning for EA review purposes. If the project receives an EA certificate, all runoff parameters will need to be estimated with accuracy as part of the post-EA detailed permitting phase.

4. PUBLIC COMMENT:
Sewage disposal issues are manageable - are not 'show-stoppers'.

PROJECT COMMITTEE POSITION:

The project committee agrees that liquid waste management issues have been adequately addressed for EA-level review purposes - see this section.

First Nations Comments on Issue and Project Committee's Position (6.2.1.2)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The first section of the report evaluated, from the perspective of the St'at'imc communities, the infrastructure development plans of the proposed resort. Liquid waste and urban runoff issues were included in the discussion. The report identified the following issues:

1. FIRST NATIONS ISSUE:
NGR should commit that any pumping systems on the sewer collection system will have sufficient capacity to accommodate power outages, and that contingency plans are in place to deal with electric power interruptions.

PROPONENT RESPONSE:

All wastewater pumping systems will be equipped with standby power in the case of power failure. In the case of power outages or full electrical power interruption, contingency plans will be in place. Where possible, the collection system will be a gravity system, thus avoiding unnecessary pumping.

PROJECT COMMITTEE POSITION:

Pumping facilities and power outages are fully regulated under the *Municipal Sewage Regulation*, Schedule 7 - Section 3. Contingency plans are dealt with in Schedule 7 - Appendix 1. NGR's response is consistent with regulatory requirements.

2. FIRST NATIONS ISSUE:

Need to address the potential for power outages (and other) failures at the liquid waste treatment plant, and develop contingency plans (e.g. provision of back-up emergency power, storage facilities, etc.).

PROPONENT RESPONSE:

The wastewater treatment plant will be equipped to manage all power outages similar to the power sewage plant at Sun Peaks, where on-site standby power is available for such outages.

PROJECT COMMITTEE POSITION:

With respect to power supply, see the project committee's response to item #1. With respect to other types of system failure, see response to item #3.

3. FIRST NATIONS ISSUE:

Need to undertake further investigations to identify a suitable method and location for sewage disposal. If rapid infiltration is found to be feasible, need to address the consequences of field failure.

PROPONENT RESPONSE:

NGR has investigated the Melvin Creek fan site and conducted site testing. NGR consultants and MELP are satisfied that the site, with slight alterations, can be made to function as a wastewater treatment disposal area. However, NGR hopes to locate a suitable treatment site in the upper valley area, which will require further investigations and approval by MELP. The preferred discharge location is the upper valley, as outlined in the project report. For any rapid infiltration system, backup infiltration trenches will be built at or near that location, so that any field failure would mean immediate discharge to a backup rapid infiltration site.

PROJECT COMMITTEE POSITION:

The project committee concurs with NGR's response, and notes that, if the disposal is to occur in the Melvin Creek fan, it is unlikely that there will be any field failure, since the fan is composed mainly of rocks and sands. If the disposal is to occur elsewhere, backup areas will be required under the *Municipal Sewage Regulation*. Investigations have been completed in the Melvin Creek fan area, which determined

that this area did not meet the regulation for ground disposal. The area consists of coarse gravel, cobbles and boulders, so that the percolation rate, and therefore the amount of renovation available, would be very low. NGR is able to use the fan as an infiltration area (i.e. as an outfall diffuser to Cayoosh Creek), but would require treatment to outfall standards in order to meet direct discharge limits. Although ground disposal would not ordinarily require disinfection, the coarseness of the soils will necessitate monitoring to determine whether or not bacteria are able to pass through the soils into Cayoosh Creek. If bacteria are found to be passing through the soils, then NGR will be required to disinfect the effluent. Phosphorus levels will be investigated prior to the construction of a liquid waste disposal system, to ensure that appropriate treatment for phosphorus will be incorporated into the liquid waste disposal system.

4. FIRST NATIONS ISSUE:

Need to ensure that large concentrations of runoff are not discharged directly into creeks, and that ditch outlets are dispersed at regular intervals along the length of road, taking adequate precautions for erosion and siltation.

PROPONENT RESPONSE:

MELP has specified terms and conditions for runoff management, and NGR has committed to meeting these requirements. NGR agrees with the St'a'imc position stated above.

PROJECT COMMITTEE POSITION:

The committee agrees with NGR's response, and notes that NGR has committed to adhering to the following guideline documents: *Guidelines to Protect, Maintain and Enhance Fish and Wildlife Habitat on and adjacent to the Proposed Golf Course Development and Existing Course Re-Development on Lowland Areas*; *Urban Runoff Quality Control Guidelines for BC*; *Land Development for the Protection of Aquatic Habitat*; and *Stream Stewardship: A Guide for Planner and Developers*. Runoff management issues will also be addressed through the Master Drainage Plan, incorporating management of runoff from all infrastructure sources, including villages, ski runs, golf courses and roads.

Proponent's Commitments Relevant to Issue (6.2.1.2)

NGR made the following commitments with respect to liquid waste and stormwater/urban drainage management issues:

- address liquid waste management issues when the Permit to Discharge Treated Wastewater is applied for, to the satisfaction of the RM-Pollution Prevention;
- install a rapid infiltration system to ground or other acceptable system to the satisfaction of the MELP RM-Pollution Prevention;
- institute a demand management program to minimize wastewater volumes;
- use gravity for collection system motivation versus pumping to minimize energy consumption;
- use aerobic treatment systems for odour prevention and reduction;
- adopt advanced secondary treatment (BOD & TSS less than 10 mg/l) as the minimum level of sewage treatment if the Melvin Creek fan location is selected for

- rapid infiltration disposal, and achieve wastewater quality consistent with MELP municipal sewage regulations, if alternative sites closer to the reservoir are selected;
- implement tertiary treatment if advanced secondary treatment is shown to be inadequate;
 - establish monitoring wells up-gradient and down-gradient of the rapid infiltration basins to assess soil renovation of the treated sewage effluent;
 - adopt ultraviolet light disinfection if the down-gradient monitoring demonstrates inadequate removal of fecal coliforms;
 - test for phosphorus to determine if phosphorus removal in the wastewater treatment process is needed (*Note* - Results from the phosphorous study should be incorporated into the design of the liquid waste disposal system);
 - incorporate flow equalisation processes in front of the treatment process, where required;
 - further investigate the additional treatment options available for converting waste bio-solids from the sewage treatment plant into beneficial use products, wherever financially feasible;
 - employ pipe anchors, where necessary to stabilise pipes in steep sections;
 - utilise existing old logging road alignments (to the greatest extent possible), where pipelines depart from roadways;
 - use influent flowmeters to the wastewater treatment plant and disposal site (if disposal is at the Cayoosh/Melvin Creek fan), to ensure that reconciliation of flows is possible, in order to verify that there are no losses in the long effluent pipeline;
 - divert stormwater around the sewage treatment and collection works, and ensure that suitable bylaws are in place to preclude the discharge of roof drains or foundation drainage systems or sump pump systems, where drainage is below pipeline elevations, to the sanitary sewer system;
 - if the piping system is below the elevation of the parkade, drainage sump pumps that drain the floor of covered parkades must be connected to sanitary system (*Note* - If parking drainage is a gravity system, it must also be connected to the sanitary system);
 - provide soils data to DFO to verify that soils can handle the expected discharge volumes;
 - meet section 36(3) of the *Fisheries Act* and section 35(1) of the *Migratory Bird Regulations* under the *Migratory Birds Convention Act* for effluent discharge, if disposal into surface waters is chosen, instead of ground disposal;
 - ensure that the wastewater treatment plant is equipped to manage any potential power outages;
 - ensure that backup infiltration ditches are built at or near the location of any rapid infiltration system, in order to handle any potential field failure;
 - if the alternative disposal site near the confluence of Melvin Creek and Cayoosh Creek is utilised:
 - install a gravity-fed pipeline along the Melvin Creek access road/logging road to convey treated effluent to an alternate disposal site; and
 - rehabilitate the pipeline right-of-way in the same manner as other areas of disturbance, except where located in the access road;

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- agree that the sanitary sewer system will be owned, operated and maintained by the SLRD, but that partnering between the SLRD and NGR could be available to facilitate its efficient operation and maintenance;
- ensure that the identification of gravel pits in the Melvin Creek valley will not interfere with the selection of the sewage disposal area, since identification of a wastewater disposal site has a higher priority than gravel pit siting.
- develop a Master Drainage Plan prior to commencing construction, which will include the following control practices:
 - address runoff from all infrastructure, including villages, ski runs, golf courses and roads, to meet levels set in the *CCME Total Particulate Matter, Canadian Water Quality Guidelines for the Protection of Aquatic Life* ;
 - match proposed development to the existing topography as much as possible;
 - schedule earthwork and construction activities during the driest periods, and suspend activities during periods of heavy rainfall;
 - retain as much existing vegetation as possible, and revegetate disturbed areas as soon as possible after construction;
 - divert runoff generated off-site away from exposed soils;
 - minimize the length and steepness of slopes, provide check dams to limit the length of drainage paths, and reduce flow velocities where concentrated flows occur;
 - where soil erosion may not be prevented, provide and maintain sediment control facilities, such as sediment traps and ponds, to capture sediment and prevent it from reaching sensitive watercourses;
 - maintain erosion and sediment control measures during and after construction; and,
 - where possible, maintain vegetation leave areas and riparian setbacks (15 to 30 meters) from development in accordance with the *Land Development Guidelines for the Protection of Aquatic Systems* and subject to ski area master plan approval by the appropriate authorities;
- establish a program to regularly monitor the water quality of all significant streams and lakes in the area, as well as stormwater runoff in drainage ditches and piped storm sewers;
- prepare a Stormwater Management Plan which will include diverting uncontaminated snowmelt and stormwater around the development;
- use vertical and horizontal setbacks for all creeks;
- construct erosion-resistant road-side ditches by using design and materials consistent with state-of-the-art practice;
- develop erosion and sediment control plans;
- employ on-site environmental monitors during earthwork construction activities;
- provide all on-site contractors with a regularly updated EMP; and
- in constructing the two villages, ski runs, golf course and roads, except where technically impossible, follow the *Urban Runoff Quality Control Guidelines for BC*; *Land Development Guidelines for the Protection of Aquatic Habitat*; *Stream Stewardship: A Guide for Planners and Developers*; *Guidelines to Protect, Maintain and Enhance Fish and Wildlife Habitat On and Adjacent to Proposed Golf Course Developments on Lowland Areas*; and *Greening Your BC Golf Course: A Guide to Environmental Management* (DoE, Fraser River Action Plan).

Status of Issue at Time of Referral to Ministers (6.2.1.2)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Waste disposal* - Proposed waste disposal systems are satisfactory and environmentally acceptable. NGR has proposed a liquid waste disposal system which will safely accommodate the sewage disposal requirements of the resort community and operations at full build-out and over the long term.

6.2.1.3 SPECIAL WASTES, HAZARDOUS WASTES, EMERGENCY PREPAREDNESS

Issue(s) (6.2.1.3)

Three issues were addressed.

- the identification of potential sources of special wastes generated at the resort;
- methods to collect, store, transport and dispose of them; and
- the contingency plans for spills at the resort and along the access road.

Content of Application (6.2.1.3)

The application did not specifically address special wastes, hazardous wastes or emergency preparedness issues.

Agency Review Comments on Application (6.2.1.3)

In its February 24, 1997 letter, MELP noted that NGR needed to identify potential sources of special wastes, and develop methods for their collection, storage, transport and disposal. Further, NGR needed to address the transport and storage of dangerous goods, and develop a plan for the prevention and cleanup of potential spills.

In its March 3, 1997 letter, DFO noted the absence of information in the application pertaining to the handling of hazardous materials, and requested that NGR provide information to address this issue. DoE, in its July 9, 1997 correspondence, identified concerns with the potential significant adverse environmental impacts of hazardous materials at the resort. DoE recommended that NGR address the potential for spills or leaks of hazardous materials by committing to specific measures designed to reduce the risks.

Proponent's Responses to Agency Comments on Application (6.2.1.3)

In its response letter to MELP dated May 15, 1997, NGR stated that a program for special waste and dangerous substances, including spill management, would be part of the resort management plan developed at the post-EA stage.

Project Report Specifications (6.2.1.3)

Per specification D.1(C)#1, NGR was required to commit to developing further detailed information at the post-EA stage of project review for the following measures: operational procedures and facilities which will meet or exceed applicable codes and guidelines for the storage and handling of fuel and other hazardous materials; an emergency contingency plan for fuel and other hazardous materials that would meet or

exceed federal/provincial guidelines; adequate availability of equipment and trained staff in place to implement contingency plans and emergency measures; and the immediate reporting of all spills to the appropriate federal or provincial agency.

Issue Treatment in Proponent's Project Report (6.2.1.3)

In the project report (Volume 2, section D), NGR committed to develop detailed plans at the post-EA permitting stage to address the issues outlined in the specifications. Further, NGR included a document entitled *Proposed Environmental Management Plan (EMP) for the Melvin Creek/Cayoosh Project* in Volume 1, section 4.6 of the project report. The EMP specified the procedures and practices which will be implemented during construction and development of the proposed resort, including proposed spill contingency and emergency planning measures. In Appendix 1 to the EMP (entitled *Environmental Specifications and Conditions – or ESC*), further information pertaining to the responsibilities for contractors to address chemical, fuel and oil handling was included.

Agency Review Comments on Project Report (6.2.1.3)

In its correspondence dated November 1, 1999, MELP requested that NGR commit to the development of a special waste management and spill contingency plan, to be completed prior to initiating site disturbance, to the reasonable satisfaction of the Regional Manager, Pollution Prevention (RM-PP). The overall spill and special waste management plan would provide direction to contractors in developing their own plans, but with the co-ordination handled by the environmental coordinator.

Proponent's Responses to Agency Comments on Project Report (6.2.1.3)

In its January 12, 2000 response letter, NGR committed to the development of a spill and special waste management plan, using the wording requested by MELP.

Follow-up Exchanges (6.2.1.3)

In its January 26, 2000 letter, MELP requested a further revision of this commitment. It requested that the commitment specify that the spill and special waste management plan would include an analysis of all reasonably foreseeable emergency situations with respect to the sewage collection and treatment system, and would suggest a suitable course of action for the system operators to follow. On February 29, 2000, Urban Systems, on behalf of NGR, submitted a revised commitment pertaining to development of spill and special waste management plan. In its March 20, 2000 correspondence, MELP indicated that all of its concerns with respect to special wastes, hazardous wastes and emergency preparedness had been addressed.

Public Comments on Issue and Project Committee's Position (6.2.1.3)

See section 6.2.1.6 (*Accidents and Malfunctions*).

First Nations Comments on Issue and Project Committee's Position (6.2.1.3)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The first section of the report evaluated, from the perspective of the St'at'imc communities, the infrastructure development plans of the proposed resort. Special waste issues were included in the discussion.

1. **FIRST NATIONS ISSUE:**

The report noted that, in order to clarify the types of special wastes expected to be produced at the resort, and the method of disposal, NGR should provide a list of special wastes to be developed, together with the expected quantities, disposal sites, transportation routes and risk assessment.

PROPONENT RESPONSE:

NGR has committed to developing a special waste management program, which would incorporate the above information.

PROJECT COMMITTEE POSITION:

The committee confirms NGR's response. Based on NGR's general special waste management commitments, the project committee is satisfied that issues raised by special wastes (such as pesticides, fertilisers, paints, etc.) can be effectively addressed in the permitting process, where detailed plans will be provided by NGR. For special wastes such as paints and batteries, an existing refund system is in place.

Proponent's Commitments Relevant to Issue (6.2.1.3)

In order to further address the management of special wastes, hazardous wastes and emergency preparedness, NGR committed to the following:

- develop detailed plans at the permitting stage to address concerns regarding special wastes, hazardous materials and emergency preparedness;
- prior to any site disturbances, develop a special waste management and spill contingency plan which includes response procedures during emergency situations, to the reasonable satisfaction of the MELP RM-PP;
- ensure that waste management plans are in compliance with the CCME *Code of Practice of Underground and Above Ground Storage Tank Systems containing Petroleum and Allied Petroleum Products*, and the CSA standard practice CAN/CAS-Z731-M91 *Emergency Planning for Industry* or MELP's *Guidelines for Industry Emergency Response Contingency Plans*;
- require all contractors working at the resort construction site to prepare Spill Contingency and Emergency Plans to prevent and deal with spills;
- develop an overall spill and special waste management plan to provide direction and information for contractors in developing their own plan; and
- place the onus for spill and special waste handling with contractors, and for on-site co-ordination, with the environmental monitor.

Status of Issue at Time of Referral to Ministers (6.2.1.3)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Waste disposal* - Proposed waste disposal systems are satisfactory and environmentally acceptable. No unusual special waste issues were identified during project review, and conventional special waste management and spill contingency planning should ensure both adequate environmental protection and public safety.

6.2.1.4 WATER QUALITY ISSUES

Issue(s) (6.2.1.4)

The issues identified included:

- management of runoff, erosion and sedimentation from disturbed areas;
- potential for road construction or other bedrock excavation to result in acid rock drainage (ARD); and
- the potential for blasting residues from road construction and avalanche control to contaminate water quality.

Note - While there is some overlap between the issues addressed in this section and in section 6.2.1.2 (*Liquid Waste Management*), most discussion of liquid waste management and stormwater/urban drainage issues is presented in section 6.2.1.2.

Content of Application (6.2.1.4)

There was little information on water quality contained in the application. The issue was briefly discussed in the [undated] *Roads and Servicing Appendix* completed by KWL, and also in the September 1996 *Preliminary Hydrology Assessment* report by EBA. NGR flagged the existing high quality of the potential water sources for the resort. However, there was little discussion of the measures which would be undertaken to ensure maintenance of the quality of these or any other waterbodies during resort development and operation.

Agency Review Comments on Application (6.2.1.4)

MELP submitted comments on this issue in its letter of February 24, 1997. Of primary concern was the lack of information pertaining to proposed measures to prevent and/or mitigate impacts on watercourses and lakes which would be affected by the resort. MELP requested that NGR provide a plan for a water quality study which would be undertaken following project certification. This plan would include a monitoring program prior to development to determine background water quality, discuss potential impacts from resort development (both point-source and non-point-source), and suggest methods used to mitigate those impacts. Plans for the management of urban and stormwater discharge, and the collection, treatment, and disposal of domestic wastewater were other requirements outlined by MELP.

Several potential impacts on water quality from road construction were also identified by MELP - specifically, the potential for ARD and the impacts from blasting agent residues. In order to address these concerns, MELP requested that NGR first determine whether

there was a potential for ARD, and if so, prepare a plan for its prevention and mitigation. With respect to blasting residues, MELP was concerned with the potential for nitrogen-based residues to negatively affect water quality and associated aquatic species. To address this, MELP requested that NGR submit plans for ensuring the efficient use of blasting agents.

In their respective comments on the application, DFO and DoE raised similar water quality issues, in that, each requested more detailed information with respect to potential impacts on water quality from resort development, and identification of proposed measures to mitigate those impacts.

Proponent's Responses to Agency Comments on Application (6.2.1.4)

In April 1997, NGR submitted a report by Urban Systems to supplement the information provided in the Roads and Servicing Appendix in the application. The report provided additional information regarding runoff and stormwater drainage issues. The technical objectives for the Stormwater/Drainage Management Plan and the general design criteria for environmental protection were outlined – see section 6.2.1.2 for more details.

In May 1997, NGR submitted a formal response to MELP comments on the application to the EAO. In this response, NGR noted that mitigation plans would be submitted if ARD was found to be present. Further, NGR indicated that a blasting plan would be in place to minimize the impacts of blasting residues on water quality. In order to address potential contamination of Melvin Lake, NGR proposed that hiking access be restricted in the Melvin Lake drainage for all summer activities and limited to one ski trail for winter activities.

Project Report Specifications (6.2.1.4)

In order to satisfy the project committee that concerns with regards to water quality would be addressed, NGR was required to provide further information in the project report. First (D.1(D)#1), NGR was required to develop a conceptual plan for a monitoring program which would include all significant watercourses and lakes in the area and meet provincial guidelines. A conceptual urban and stormwater discharge management plan to address erosion and sediment issues was also required (D.1(D)#2). This plan needed to include consideration of blasting residues associated with construction and operation of the resort and/or access road and any ARD concerns. With respect to ARD, NGR was required to evaluate the potential for ARD, and if a potential was identified, to submit a conceptual plan for addressing the issue (D.1(D)#3). NGR was also required to commit to the efficient use of blasting agents and adequate monitoring of their effects (D.1(D)#5).

Issue Treatment in Proponent's Project Report (6.2.1.4)

In Volume 1, section 4 of the project report, NGR committed to establishing a water quality monitoring program for the significant watercourses and lakes in the resort area. Further, NGR outlined the components of a conceptual water monitoring program to be initiated prior to project construction and to continue during the resort's development. The components discussed included the timing, frequency and location of water sampling, as well as the parameters to be collected. NGR committed to ensuring that

water sampling protocols, parameters to be measured and suitable detection limits would meet the appropriate British Columbia guidelines.

Also included in section 4 of the project report was a commitment by NGR to prepare a Master Drainage Plan prior to the commencement of project construction. The discussion of this plan included objectives, major design criteria, potential erosion and sediment control measures and stormwater management.

In Volume 2, section D, NGR submitted information provided by MEM, indicating that the relatively small-scale blasting that would occur during access road construction and resort development would not result in detectable amounts of nitrates in runoff waters. Further, NGR reviewed experience at existing resorts where significant snow avalanche control, using explosives, is carried out, and found no identified negative impacts. NGR committed to the efficient use of blasting agents during construction, and noted that certain types of explosives used in avalanche control were not nitrate-based and thus did not have the associated concerns.

NGR provided further information regarding the potential for ARD during access road construction. NGR noted that, based upon information provided by KWL, MoTH, MoF and MEM, there is a low potential for ARD along the proposed access road and that, in the event that ARD is identified, site-specific mitigation is possible by routing runoff to safe ground discharge areas or holding ponds. Based on this, NGR proposed to undertake sampling for ARD as the road is constructed, and immediately implement mitigation plans and management measures, should any ARD be identified.

The project report also included Environmental Management Plan (EMP) and Environmental Specifications and Conditions (ESC) documents. The EMP specified procedures and practices which would be implemented during construction and development activities associated with resort development. The ESC was meant to assist in guiding construction practices in order to ensure compliance with the applicable federal and provincial laws, regulations, permits, licenses and approvals. Of particular relevance to water quality issues were the practices proposed to guide instream works, clearing and grubbing, and construction discharges, erosion and sediment control.

Agency Review Comments on Project Report (6.2.1.4)

In its letter dated November 1, 1999, MELP indicated that the project report had supplied the necessary information requested in the project specifications regarding the water quality issue. MELP did note several points which required clarification, further information or a commitment from NGR. Specifically, MELP laid out a series of twelve statements to which NGR needed to commit in order to ensure that impacts on water quality would remain at acceptable levels, summarized as follows:

- meet or better the expectations in the *Municipal Sewage Regulation* and if the Melvin Creek fan disposal option is required, the commitment should include advanced secondary treatment (10/10) and a study to determine the need for non-chlorine-based disinfection and phosphorous removal;

- with respect to the proposed golf course, NGR should follow the provincial guidelines with respect to maintaining fish and wildlife habitat adjacent to golf course developments;
- develop the villages, ski runs and roads in compliance with B.C. guidelines respecting urban runoff, land development and the protection of aquatic habitat and stream stewardship;
- develop a Master Drainage Plan to address runoff from the villages, ski runs, golf course and roads;
- revegetate all disturbed areas (including alpine and sub-alpine areas) as quickly and efficiently as possible, and monitor them until they have reached a self-sufficient revegetated state;
- work with SLRD to develop an acceptable Solid Waste Management Program;
- develop an overall spill and special waste management plan which would provide direction and information for contractors developing their own plans;
- deal with any potential ARD during road or other construction which involves significant amounts of rock blasting, as stipulated in the February 18, 1999 letter from MEL to EAO;
- use blasting compounds in an efficient manner in order to reduce the amount of residual nitrates released into the environment;
- undertake a water quality monitoring program acceptable to the RM-PP which measures the impacts of the development on the water quality of Melvin and Cayoosh Creeks;
- use natural gas or propane as the prime energy source for heating and the generation of electricity, with diesel systems only used for backup; and
- hire an environmental monitor for education and liaison with contractors, monitoring of water quality and pollution control measures, and administering of the spill and special waste provisions of the development.

Proponent's Responses to Agency Comments on Project Report (6.2.1.4)

On January 12, 2000, NGR provided further information regarding the water quality issue. NGR attempted to address each of the concerns outlined in MELP's November 1, 1999 comments and also provided a summary listing of its commitments with respect to water quality.

Follow-up Exchanges (6.2.1.4)

MELP replied to NGR's submission on January 26, 2000. Generally, MELP did not raise any new concerns, but rather, provided a series of additions, revisions and suggested changes to NGR's commitments pertaining to water quality.

NGR provided updated versions of both the EMP and ESC documents on January 21, 2000. In its February 29, 2000 correspondence, MELP noted that while generally the updated EMP document met the requirements of the specifications, both it and the ESC document required further revision/additions prior to final acceptance. In its March 14, 2000 correspondence, NGR acknowledged and accepted all of the changes and additions to the EMP/ESC documents as proposed by MELP. Further, NGR committed to detail and finalize the EMP/ESC at the post-EA stage to the satisfaction of the RM-PP and the RM-FWH.

In its letter dated March 10, 2000, DFO noted continued concern with potential water quality impacts resulting from the use of explosives at the resort. DFO requested that NGR commit to pumping water away from blasting areas to discharge to the ground. This issue was also raised at the March 17, 2000 project committee meeting. During that meeting, MELP requested clarification as to whether non-nitrate based explosives were being considered by NGR for road construction and avalanche control.

This issue was further discussed between MoTH, MELP, NGR and DFO through a series of email correspondence in March/April, 2000. MoTH expressed some concern that restrictions on the use of non-nitrate-based explosives for avalanche control would be impracticable. MoTH indicated that it had been successfully managing avalanche hazards throughout the province using nitrate-based explosives and that the measures undertaken at the resort should be consistent with this program. MELP noted that it had not stated or implied that non-nitrate-based explosives should be required, but rather that the proponent should clarify whether it intended to use non-nitrate-based explosives as was stated in the project report. MELP stated that NGR had attempted to address the potential for nitrate-based pollution to water by committing to using non-nitrate-based explosives during road building. MELP only requested that NGR describe what non-nitrate-based explosive they would utilise (if there were any) or remove the reference to this type of explosive.

NGR provided a letter report discussing the use of blasting agents for road construction and avalanche control on March 24, 2000 (finalized March 30, 2000). The letter report outlined the expected use of explosives during resort development and operations, and concluded that ammonium nitrate explosives could be used without impacts. It further noted that the water quality monitoring program would include nitrate levels, and if these levels were to become unacceptable, other explosives or release techniques could be implemented. NGR also referred to section 6 of its revised ESC document, which deals with drilling and blasting, specifically, section 6.3, which commits that *"...during and following drilling and blasting operations, mitigating measures shall be taken to guard against sediment transport and water pollution from runoff..."* NGR concluded by reaffirming its commitment to monitoring site drainage and water quality around all blasting sites, and managing drainage away from the blast sites.

In its March 24, 2000 correspondence, MoTH indicated it was satisfied that the proponent's response had resolved the issue. MELP, in its March 31, 2000 correspondence, noted that although it felt the potential impacts to water quality from explosives-use at the resort were not as insignificant as the proponent predicted, it was satisfied that the commitments made by NGR were sufficient to address the issue.

In its April 7, 2000 correspondence, DFO clarified that it was not concerned with the explosives use associated with avalanche control, but rather, the potential for nitrate-polluted runoff resulting from blasting during road construction. DFO requested that the proponent commit to pump any accumulations of water (natural drainage or runoff due to rain) away from blasting sites to ensure that nitrates not get into the water table. After subsequent discussions of this requirement, DFO clarified the nature of its concern in its June 19, 2000 correspondence to EAO. DFO noted that, due to potential contamination from blasting compounds, it wanted assurance that water drainage from blasting areas

would not enter fish-bearing water courses. DFO indicated that this issue would be addressed if NGR committed to this measure. NGR agreed to this commitment in subsequent discussions with EAO.

Public Comments on Issue and Project Committee's Position (6.2.1.4)

1. PUBLIC COMMENT:

The use of pesticides on the proposed golf course could impact water quality.

PROJECT COMMITTEE POSITION:

NGR has committed to develop and operate the golf course in accordance with government guidelines intended to protect water quality, and the environment in general. The project committee is satisfied that potential impacts on water quality from the golf course have been adequately addressed for EA review purposes - see this section.

First Nations Comments on Issue and Project Committee's Position (6.2.1.4)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The first section of the report evaluated, from the perspective of the St'at'imc communities, the infrastructure development plans of the proposed resort. Water quality issues were included in the discussion.

The report identified the following issue:

1. FIRST NATIONS ISSUE:

NGR needs to address potential impacts of surface runoff contaminated by road salts or other de-icing chemicals used on roads.

PROPONENT RESPONSE:

The maintenance and management of the access road will be the responsibility of MoTH, and provincial requirements will be met in all respects. It is NGR's understanding that sand used on access roads to ski areas has not led to measurable contamination at any BC winter resorts.

PROJECT COMMITTEE POSITION:

The project committee concurs with NGR's response, and in addition, notes that salt contamination from roadway maintenance activities has been under discussion between the MoTH and MELP for some time. MoTH has looked at alternatives to salt for winter maintenance activities and has found no alternatives that are effective and economical. Salt is generally used either as an additive to the road surface for de-icing or part of a salt/sand mixture. Application rates may vary depending on weather and road surface condition. It should also be noted that road sand often

contains a 5 to 10% salt component to prevent stockpiles from freezing and allow for road application. Generally, the goals for maintenance practices are to minimize salt damage along the road right-of-way, particularly ditch vegetation. The project committee noted that salt storage sheds will be built according to established requirements designed to minimize impacts on aquatic and vegetated environments, and that impacts from road salts or other de-icing chemicals have been further addressed in the NGR commitments to:

- re-use salt recovered from drainage holding ponds for uses such as dust control on gravel roads and parking lots, wherever possible;
- discharge salt to the environment only after approval by MELP; and
- not use salt, and only use very limited sand applications, on the walking trail.

Other First Nations water quality issues, relating to golf courses, are responded to in section 6.2.3.1 (*Fisheries Resources*).

Proponent's Commitments Relevant to Issue (6.2.1.4)

In order to further address potential water quality issues, NGR made the following commitments:

- develop a water sampling and quality monitoring program, to the satisfaction of the MELP RM-PP, with protocols and parameters consistent with guidelines identified in the *BC Field Sampling Manual*, 1996, and the *BC Environmental Laboratory Manual For the Analysis of Wastewater Sediment and Biological Materials*, 1994;
- conduct baseline monitoring once access is established, and before significant disturbance occurs (preferably for one year)
- undertake sampling several times per year, and include discharge (peak-flow and low-flow runoff periods), nutrients, NFR, turbidity, pH, conductance and temperature parameters;
- carry out laboratory analysis twice per year (May and August) for baseline on metals (standard metal package at suitable detection limits), fecal bacteria and anions (chloride, sulphate, fluoride);
- develop a water quality monitoring program to conduct routine samples from stormwater and wastewater systems, once the resort is in operation;
- implement monitoring by either resort staff trained as water quality technicians or by contracting out;
- subject to monitoring results, and based on the total particulate matter criteria in the guide *Canadian Water Quality Guidelines for the Protection of Aquatic Life* (CCME), 1999, develop and undertake appropriate mitigative measures to reduce negative impacts on water quality.
- rehabilitate the pipe trench surface where it diverges from the main road, to minimize non-point-source erosion and sediment concerns;
- re-use salt recovered from drainage holding ponds for uses such as dust control on gravel roads and parking lots, wherever possible;
- discharge salt to the environment only after approval by MELP;
- address potential ARD concerns, meeting ARD regulations set out in the *BC Mines Guidelines for Metal Leaching and Acid Rock Drainage in Mineral Management*;

- undertake site-specific mitigation by managing water runoff to safe ground discharge areas or holding ponds in the event that ARD is identified (**Note** - If a large, highly acidic deposit is to be disturbed or excavated, the above mitigation may be insufficient, and alternate mitigation measures would be developed);
- efficiently use blasting compounds during road construction in order to reduce the amount of nitrates released into the environment, including the use of emulsion-type blasting agents whenever environmental conditions dictate (**Note** - Monitoring of effects is to be conducted under the water quality monitoring program);
- ensure that water encountered during blasting will not leave the site and enter fish-bearing watercourses,
- ensure that culverts are installed in compliance with the following:
 - at locations shown on the final detailed construction drawings to minimize erosion and sedimentation, and in a manner that permits fish passage where fish species are present;
 - during low-flow periods, whenever possible (**Note** - During installation, channel flows shall be diverted from the culvert site and the culvert installed in the dry. Such diversions shall ensure that siltation is kept to a minimum and the stream controlled at all times. For any works in fish-bearing reaches, the Contractor may be required to provide for fish passage during culvert installation at the site, as required by the Environmental Monitor); and
 - on the natural gradient of the streambed, not horizontally (**Note** - Culvert inverts shall be installed below the natural stream bottom).

Status of Issue at Time of Referral to Ministers (6.2.1.4)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- ***Water quality*** - Impacts on local and regional water quality from the development will be adequately addressed through NGR's commitments to develop and implement an Environmental Management Plan (EMP), Environmental Specifications and Conditions, Master Drainage Plan, water quality monitoring program and appropriate mitigative measures to reduce negative impacts on water quality.
- ***Environmental management plan*** - NGR has developed an EMP which outlines ongoing procedures and practices to protect the environment, including the use of an independent environmental monitor during construction and development of the proposed resort to reduce negative impacts.

6.2.1.5 AIR QUALITY ISSUES

Issue(s) (6.2.1.5)

The issues identified included the potential air quality implications of:

- a thermal generation plant (if utilised); and
- residential heating and other sources of urban air contaminants.

Content of Application (6.2.1.5)

In the application, NGR proposed that the resort's power supply be generated on-site in order to progressively phase the capital costs as the resort develops. Although few details were provided, the proposed power supply would be generated by diesel or gas-powered turbines equipped with a heat-recovery system. This system would capture waste heat to use it for heating centrally-located buildings in the resort. Auxiliary heating with a resort-based propane system was also proposed. This would help to reduce the peak electrical demands associated with electric heating and water heating. If the resort were to reach its anticipated level of growth, NGR would reconsider whether to obtain power through a permanent off-site transmission line hook-up to BC Hydro's integrated power distribution grid.

NGR's application did not provide specific information on air quality issues.

Agency Review Comments on Application (6.2.1.5)

In its letter dated February 22, 1997, DoE noted that air quality in the valley and surrounding area could be negatively affected by resort-based factors, including residential wood smoke, fossil-fuel-powered electrical generation and vehicle emissions. DoE required that NGR fully address those issues in the project report.

MELP, in its February 24, 1997 letter, commented on the lack of information in the application with respect to energy needs and associated air quality impacts. MELP required that NGR identify options for energy supply, and provide an assessment of the environmental impacts of the preferred option. Identification of potential impacts to air quality from residential heating and other urban sources of air contaminants was also required by MELP. In particular, NGR was required to clarify whether wood-burning stoves/fireplaces would be utilised at the resort.

Proponent's Responses to Agency Comments on Application (6.2.1.5)

In its May 15, 1997 response to MELP comments, NGR proposed that wood-burning stoves be prohibited, except for one wood-burning fireplace in the public lobby of each building containing more than 100 guest rooms. NGR further noted that air quality monitoring would be undertaken as the resort developed, and that, if it became apparent that inversion conditions led to air quality problems associated with hotel fireplace smoke, further fireplaces would be prohibited.

With respect to power generation, NGR noted that all power requirements could be generated by propane engines or using an equally clean-burning fuel source. Hydro-electric generation would not be used.

Project Report Specifications (6.2.1.5)

All of the specifications for this issue were conditional, that is, their applicability depended upon the power-generation option selected for the resort. The first of these (D.1(E)#1) applied if the energy supply option were to result in emissions to the atmosphere, either on-site or off-site. If so, NGR was required to identify the volume and composition of the emissions, describe potential impacts on air quality, and propose mitigative measures. The second specification (D.1(E)#2) applied if on-site power generation was proposed. In this case, NGR would be required to select proven

technology and provide existing background climate data. Also, NGR would need to collect further climate data necessary for air dispersion modelling and provide a preliminary air dispersion capability assessment. The final specification (D.1(E)#3) applied if NGR determined that off-site energy sources would be utilised. In this case, environmental assessment mapping was to be undertaken along transmission corridors in order to establish an inventory of potential occurrences of red-listed or blue-listed species. Further, NGR needed to identify potential impacts and propose measures to mitigate those impacts.

Issue Treatment in Proponent's Project Report (6.2.1.5)

Energy use and related air quality issues are discussed in Volumes 1 (section 4.5) and 2 (section D) of the project report. NGR also included separate reports by DESCO and Levelton Engineering Ltd. which addressed options for energy generation and assessed air quality respectively. NGR confirmed that no off-site energy sources would be utilised.

The DESCO report concluded that natural gas was the optimum energy source for the resort, since it would produce the fewest greenhouse gas emissions of any fossil fuel. NGR proposed that liquefied natural gas (LNG) be trucked to the resort and distributed to resort buildings from a central storage facility. The proposed power generation system would be constructed as an integrated grid, allowing additional electrical generation to be added as demand increases. Heat would be recovered from the power generators and utilised for heating resort buildings and/or recreation facilities.

The Levelton report provided a screening-level analysis of the impacts of the resort on the local airshed. A summary of the anticipated sources of emissions was provided. Electrical power generation would consist of 4 or 5 generator sets, producing a total of 9.4 MW of power. Space heating in resort buildings would be achieved through a combination of natural gas space heating and heat recovery from the power generators. Vehicle use would be limited, since the resort would be designed to encourage pedestrian use. Wood-burning fireplaces would be restricted to the lobbies of buildings with at least 100 accommodation units. The report noted that emissions from space heating, vehicles and a proposed sewage treatment plant are not expected to significantly degrade the air quality of the Melvin Creek watershed.

Since proposed on-site power generation represented the bulk of emissions for the resort, a dispersion analysis of NO_x emissions was conducted. The results showed that the maximum impact of air emissions from electric power generation would be less than the level that MELP considers adequate to provide protection against adverse effects on human health and comfort, vegetation, animals, soils, water, materials and visibility. Overall, the report concluded that the operation of the proposed resort would result in a relatively small, localised negative impact on the local airshed, but that there would be no lasting residual effects on air quality.

Agency Review Comments on Project Report (6.2.1.5)

In its November 1, 1999 comments on the project report, MELP noted that NGR had supplied the necessary information regarding this issue. Although particulates (CO, ozone and SO₂) impacts were not addressed, MELP was satisfied that the severe restrictions on wood-burning and minimal traffic at the resort would render these less

significant than NO_x. MELP noted that the modelling results would be subject to further ministry review, and requested that NGR confirm its commitment to use natural gas or propane as the prime energy source for electricity generation and heating (allowing for a diesel-fuelled backup system for emergencies).

Proponent's Responses to Agency Comments on Project Report (6.2.1.5)

NGR, in its January 12, 2000 response document, provided the commitment requested by MELP, but also added that it would consider a more environmentally-friendly alternative energy source if it were feasible.

Follow-up Exchanges (6.2.1.5)

During the March 17, 2000 project committee meeting, MELP requested that NGR's commitment to restrict the number of wood-burning stoves be revised to include all "wood-burning appliances". NGR agreed to the requested revision in its March 24, 2000 correspondence.

Public Comments on Issue and Project Committee's Position (6.2.1.5)

1. PUBLIC COMMENT:

The application has a lack of useful information on intended energy supply sources.

PROJECT COMMITTEE POSITION:

The project report confirmed that the electricity supply for the proposed resort would be generated on-site, using a LNG-fired power generation facility. The project committee is satisfied that the energy supply issue has been adequately addressed for EA review purposes - see this section.

2. PUBLIC COMMENT:

Need to address the impacts of on-site power generation.

PROJECT COMMITTEE POSITION:

NGR proposes an LNG-fired power generation system, which raised air quality concerns. The project committee is satisfied that air quality concerns and any other potential impacts of the power supply proposal have been adequately addressed for EA review purposes- see the discussion in this section.

3. PUBLIC COMMENT:

What will be the impact of vehicular emissions on air quality?

PROJECT COMMITTEE POSITION:

Vehicular emissions were determined to have a negligible impact on air quality at the proposed resort. The primary air quality concerns were connected with: (1) the LNG-fired power generation system - see above responses; and (2) the possible effects of wood-burning appliances. NGR has proposed acceptable mitigation strategies in both instances - see the discussion in this section - and the project committee has concluded that potential air quality impacts have been satisfactorily addressed for EA review purposes.

First Nations Comments on Issue and Project Committee's Position (6.2.1.5)

No specific comments on air quality were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.2.1.5)

In order to further address potential air quality issues, NGR committed to:

- restrict the use of wood-burning appliances in all accommodation units, with the exception of public buildings exceeding 100 rooms, where one natural wood fireplace would be permitted;
- encourage the SLRD to impose a moratorium on all wood-burning fireplaces, if studies indicate that their use in major buildings is contributing to air quality problems; and
- use natural gas as the fuel supply for power generation and building heating (**Note** - Best available control technology would be used in the power generation plant and all generation engines would be equipped with heat-recovery jackets, with the recovered heat distributed to nearby buildings).

Status of Issue at Time of Referral to Ministers (6.2.1.5)

The project committee considers the air quality issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Air quality* - NGR has addressed local and regional air quality impacts through commitments to prohibit wood-burning devices (except for one wood-burning fireplace in the public lobby of each building containing more than 100 guest rooms), and to monitor air quality as the resort develops. LNG will be the fuel supply for power generation and building heating. Best available control technology will be used in the power generation plant, further reducing emissions.

6.2.1.6 ACCIDENTS AND MALFUNCTIONS

Issue(s) (6.2.1.6)

Addressing this issue is a legal requirement under CEAA (s.16.1). In this case, issues included:

- the identification of the environmental effects of any potential malfunctions or accidents which may occur in connection with the project, and
- proposed mitigation measures and contingency plans to address these effects.

Content of Application (6.2.1.6)

The application provided no specific information pertaining to potential accidents or malfunctions at the proposed resort.

Agency Review Comments on Application (6.2.1.6)

No specific comments made by reviewers.

Proponent's Responses to Agency Comments on Application (6.2.1.6)

No specific comments made by NGR.

Project Report Specifications (6.2.1.6)

NGR was required to address the requirements of section 16(1) of CEAA in its evaluation of the project (H.1#2). The project committee suggested an approach to meet this requirement in Appendix A of the specifications. It noted that NGR should identify any potential problems associated with accidents or malfunctions during the construction and operation of the project. NGR should also identify the risks that these events may pose, and propose plans which would meaningfully respond to such incidents, including contingency planning. Risk analysis should be included as a key step in contingency planning.

Issue Treatment in Proponent's Project Report (6.2.1.6)

In Volume 2, section H, Appendix C of the project report, NGR discussed potential resort-based accidents and malfunctions. Potential environmental impacts from construction and operational activities were identified, and mitigative measures were proposed. Further, NGR provided a general plan for addressing emergencies at the propane/LNG plant. NGR noted that detailed information pertaining to accidents and malfunctions, together with the EMP, will be included as provisions for project construction, and incorporated into all system environmental management measures.

Agency Review Comments on Project Report (6.2.1.6)

Federal agencies involved in the project review (DFO & DoE) provided no further comments with respect to this issue.

Proponent's Responses to Agency Comments on Project Report (6.2.1.6)

Since no outstanding concerns were identified, NGR provided no further comment on this issue.

Public Comments on Issue and Project Committee's Position (6.2.1.6)

1. PUBLIC COMMENT:

Concerned with hazards associated with transporting natural gas over steep mountain roads.

PROJECT COMMITTEE POSITION:

See below, project committee's response to First Nations issue #1.

First Nations Comments on Issue and Project Committee's Position (6.2.1.6)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The first section of the report evaluated, from the perspective of the St'at'imc communities, the infrastructure development plans of the proposed resort. Special waste issues were included in the discussion, and some of these issues are responded to in section 6.2.1.3. A concern was also identified with respect to transportation of LNG, and is addressed here.

1. FIRST NATIONS ISSUE:

UMA raised a concern over transportation of LNG through St'at'imc communities, and also questioned whether the existing provincial supply of LNG was adequate to supply the resort. The report recommended that NGR further investigate the safety aspects of LNG tankers passing through St'at'imc Nation communities, as well as whether there is an existing adequate supply of LNG to meet resort needs.

PROPONENT RESPONSE:

DESCO, which is a subsidiary of BC Gas, has advised NGR that there are no special accident or safety issues in BC with regards to LNG transportation, which is regulated under federal transportation legislation. DESCO also confirms that sufficient supply would be available from a plant located in Tilbury Island, Delta. At the present time, LNG is transported several times per week to Adams Lake from the Tilbury site.

PROJECT COMMITTEE POSITION:

The project committee is satisfied that an adequate supply of LNG would be available for the resort. MEM has advised the project committee that LNG is a commodity which is freely traded on the open market. Both BC and Alberta supply significant quantities to the market.

Regulation of the transportation of LNG falls under federal jurisdiction, specifically under the *Transportation of Dangerous Goods Act (TDGA)*. Any company which transports LNG is required to comply with the *TDGA* and its Regulations. Part 4 of the *TDGA* outlines the types of documentation required for transporting such material, Part 5 outlines the placarding required on the tank, Part 7 outlines the tank specifications according to CSA standards (i.e. 620 and 622; truck no. 338) and Part 9 outlines the training required for drivers and off-loading personnel to be qualified to handle LNG. Transport Canada (DoT) conducted an inspection of BC Gas Utility Ltd.'s LNG Plant on June 1, 2000. The tank trailer and company were found to be in compliance with the *TDGA*, and the company was fully aware of the *TDGA* and other safety requirements.

Due to the cryogenic properties of LNG, an accidental spillage may result in instant, temporary freezing of anything with which the liquid comes into contact prior to vaporising. DoT has indicated that it is unaware of any accidents which have occurred as a result of transporting such material. DoT advises that, if an accident site is cordoned off, the risk to a community around the area can be safely minimized until an emergency response team arrives to deal with the incident.

Proponent's Commitments Relevant to Issue (6.2.1.6)

In order to further address accidents and malfunction issues, NGR committed to:

- include detailed information pertaining to accidents and malfunctions, together with the EMP, as provisions for project construction, and incorporate them into all system environmental management measures.

Status of Issue at Time of Referral to Ministers(6.2.1.6)

The project committee considers accident and malfunction issues resolved for the purposes of the EA certification decision.

6.2.2 WATER MANAGEMENT

6.2.2.1 WATER SUPPLY

Issue(s) (6.2.2.1)

The issues associated with the proposed resort's water supply included:

- the projected water demand;
- the adequacy of sources of water supply;
- water rights allocation; and
- options for water treatment and recycling.

There were both technical and administrative aspects to the issue of whether there is sufficient water available for the resort at its proposed location. Technical aspects related to whether there was enough water physically available to meet the resort's demand at full build-out. Administrative aspects related to matters affecting whether there was sufficient unallocated water to issue a water licence for the resort.

Water supply issues span the jurisdictions of three agencies, MELP, MoH and SLRD. MELP involvement pertains to the issuing of a water licence which would allocate a specified volume of water (with any necessary conditions) for resort use. MoH responsibility relates to issuing a construction permit for the waterworks. The public health engineer is responsible for ensuring that the water system would provide a potable water supply, and that construction conforms with industry standards and guidelines. The SLRD or other local government will assume future ownership and operation of the water system. Design and construction standards would be specified in a subdivision servicing bylaw prior to construction.

Content of Application (6.2.2.1)

In section 14 of NGR's application, NGR included a September 1996 report entitled *Preliminary Hydrology Assessment – Melvin Creek British Columbia*, prepared by EBA Engineering Consultants Ltd. (EBA). The objective of this assessment was to address the potential for utilising available surface water sources for domestic water supply, snowmaking and hydro-electric power generation. Melvin Lake was identified as a suitable source for domestic water supply, in terms of both quality and quantity. It was estimated that Upper Twin Lake contained sufficient storage volume to provide water to

meet snowmaking requirements. Neither Melvin Lake nor Second Lake were deemed suitable for hydro-electric power generation. The need for further hydrological data collection and study was identified.

A preliminary discussion of the water management system was included in the [undated] *Roads and Servicing* report by Kerr Wood Leidal Associates Ltd., found in section 3 of the application. Melvin Lake was confirmed as the preferred water source and storage site. NGR also proposed to increase the storage capacity of the lake by constructing a low dam, and accessing natural storage by dredging the outlet channel. The key elements of the proposed water system included Melvin Lake storage with a small dam and intake works, a supply pipeline from Melvin Lake to a treatment station, ultraviolet treatment system, primary transmission mains and pressure-reducing stations.

Agency Review Comments on Application (6.2.2.1)

In its response letter dated February 24, 1997, MELP expressed some concerns regarding NGR's treatment of the water management issue in the application. MELP requested that NGR confirm whether it or SLRD would be the owner/operator of the water supply system. MELP also noted that a more detailed hydrology study would be required if a surface water source, as proposed, was confirmed. This would need to confirm that the water source would be satisfactory to meet the anticipated demand. A comprehensive water supply/delivery plan for the proposed resort was also required. That plan was intended to address the long-term reliability of proposed water sources (including groundwater), and provide an estimate of the demand. It also needed to consider the potential impacts on downstream licensees, fisheries habitat, recreational water users, and First Nations, and recommend mitigation strategies.

DFO, in its March 3, 1997 letter, also noted that there was insufficient information provided in the application to determine the potential impacts of the proposed water impoundment structure and extraction activities on the hydrological regime of Melvin and Cayoosh Creeks. In order to address this, DFO requested that an assessment of the downstream effects of possible hydrological changes be undertaken.

The issue of water availability in the Cayoosh Creek watershed and protection of the rights of downstream licensees also needed to be addressed by NGR in consultation with MELP. Since the existing water licence demand and reserve(s) could preclude further diversion of water from the Melvin or Cayoosh Creek watersheds, NGR needed to demonstrate that the prior rights of existing downstream licensees, existing water use applicants and the *Water Reserve by Order-In-Council* would be satisfied.

Proponent's Responses to Agency Comments on Application (6.2.2.1)

In April 1997, NGR submitted an April 1997 report prepared by Urban Systems in support of the application, entitled *Supplemental Information to the Roads & Servicing Appendix*. The intent of this report was to provide a general outline of how the various resort services will function, and to illustrate how the potential impacts on the environment could be mitigated. The report confirmed that Melvin Lake was the preferred long-term water source for the resort, with Second Lake, Upper Twin Lake and possibly groundwater as secondary sources. The report also calculated that the construction of a low-head dam at the outlet of Melvin Lake would provide enough

storage to ensure an adequate supply of water for the resort at full build-out. Also in April 1997, NGR submitted an April 17, 1997 report by EBA, entitled *Groundwater Potential and Secondary Effluent Disposal Evaluation*. This report was prepared to assess the groundwater potential for the Melvin Creek watershed. It found that the potential for groundwater supply existed, but further study would be needed to determine whether this potential would satisfy the water demand beyond the initial years of development.

Project Report Specifications (6.2.2.1)

NGR was required to address outstanding concerns with respect to both the technical (water availability/demand) and administrative (water access/effects on existing licensees) aspects of the water supply issue. NGR needed to demonstrate that existing water rights would not pre-empt access to adequate water to supply the resort (D.2(A)#1). Based upon the results of the first requirement, NGR had to provide a comprehensive, planning-level water supply/delivery plan for the resort, which included strategies to avoid or mitigate potential negative environmental impacts associated with water withdrawals (D.2(A)#2). A detailed hydrology study needed to be conducted to assess the potential of the basin to meet current demand from existing and pending licenses (D.2(A)#3). This had to include an examination of seasonal availability versus demand, and also the impacts of the proposed dam and additional water storage in Melvin Lake (D.2(A)#4). Further information on the impacts on Second Lake was also required (D.2(A)#5). NGR was required to confirm that the water supply system would be built and operated as a municipal system (D.2(A)#6), and that chloramine would not be used for pre-consumptive water treatment (D.2(A)#7). Finally, if options for water conservation were being considered, NGR was required to outline the proposed methods and estimate the amount of water savings (D.2(A)#8).

Issue Treatment in Proponent's Project Report (6.2.2.1)

In Volume 1, section 4 of the project report, NGR included the May 1999 *Resort Infrastructure* study by Urban Systems. It provided an overview of the additional information acquired regarding water supply. Further details pertaining to how each of the specifications were addressed was provided in Volume 2, section D of the project report. The project report was supplemented by additional information submitted by Urban Systems on July 21, 1999 and August 12, 1999.

NGR presented a water supply/delivery plan in the project report, the essence of which included:

- diversion systems from Melvin Lake and Second Lake to supply up to 350,000 m³/year to the resort for domestic use;
- storage and diversion structures on Melvin Lake to store 160,000 m³ of water, and on Second Lake, to store 165,000 m³, and which would release water during low-flow (winter) months when demands for domestic use in the resort are highest;
- a diversion of up to 25,000 m³/year from Upper Twin Lake to supply a snowmaking system;
- a potential diversion of up to 40,000 m³/year from Second Lake to supply a golf course irrigation system, and 20,000 m³/year for snowmaking; and
- a recommended disinfection scheme that would include primary and secondary treatment.

Existing and pending water allocation rights for Cayoosh Creek were described in detail. NGR confirmed that the potable water system would utilise Melvin Lake as the primary supply, since it offers pristine quality water, and, together with additional storage on Second Lake, would meet the resort's water demands at build-out in a 1-in-25-low-flow year without impacting downstream users. If required, an alternate source may include groundwater. It was anticipated that NGR would initially undertake investigations to determine the availability of groundwater, since, even if limited in quantity, it would postpone the need to develop a more expensive supply scheme from the lakes.

Water consumption demand for the resort was estimated based upon the usage rates demonstrated at the Sun Peaks resort near Kamloops. Based upon the combination of mandatory use of modern water-conserving plumbing fixtures, volume-based water metering, and public education programs, NGR estimated usage rates of 225 l/day for overnight visitors and residents and 40 l/day for day visitors and non-resident employees. Based upon this estimated usage rate, the total annual domestic water demand at build-out would be 350,000 m³.

NGR assessed the seasonal water demand of the resort, and compared it with the seasonal availability of water at Melvin Lake for an average year, and for a 1-in-25-low-flow year. This assessment identified the need for additional storage of 60,000 m³. To accomplish this, surface water elevation would need to fluctuate by a total of 3 m; a low-level dam would raise the lake level by 1 m, and subsequent draw down would bring it to 2 m below the natural level. NGR included two separate letter reports, from Sirius Environmental Research (March 15, 1998) and Arc Environmental Ltd. (March 25, 1998) respectively, in the project report. Both of these reports concluded that the proposed storage plan on Melvin Lake, including the 2-m draw-down in winter, would have no significant environmental impact.

Upper Twin Lake was proposed as the source of 25,000 m³ of water for a snowmaking system for the resort. Since this lake forms part of the Haylmore Creek drainage basin, NGR investigated the potential impacts of this proposed water diversion on downstream users. NGR noted that the snowmaking diversion period would not occur until late fall (Oct. 1 – Jan. 1), at which time there would be little demand for downstream irrigation. Further, since such a small proportion of the Haylmore drainage would be required for snowmaking (< 0.04%), there would be no negative impact to downstream users.

In addition to the required domestic supply, other planned uses of Second Lake were also outlined in the project report. Due to its availability, location and elevation, Second Lake was recommended as the source for irrigation of the 9-hole golf course proposed for the resort. A low dam structure, which would retain approximately 0.3 m of water, would provide the estimated 20,000 m³ needed for golf course irrigation. Second Lake was also considered as a supply source for a potential snowmaking system on the lower village slopes. An additional height of 0.3 m on the dam structure would provide the additional 25,000 m³ of storage necessary for this task. NGR confirmed that there would be no hydro-electric power generated on-site using Second Lake, and that access would be via a skiway road connecting Second Lake to the upper village.

Cayoosh Creek was considered by MELP to be fully licensed, with four existing water licenses, three outstanding licence applications (plus two outstanding applications on the tributaries), and an Order-In-Council which reserves a portion of water for fisheries and municipal waterworks. NGR concluded, based on the information presented, that the Melvin Lake water supply scheme proposed for the resort should not be denied based on existing water rights commitments, since it could demonstrate that there would be no impact on the existing licenses. It was noted that domestic water at the resort would be used, collected, treated and returned to the groundwater regime. By storing water in Melvin Lake and Second Lake during spring freshet, and discharging it over the year, NGR calculated that Melvin Creek flows will actually be higher during low-flow (winter) months, which would marginally increase the water available to downstream users.

NGR also presented a second water storage site, in order to confirm that an adequate potable water supply could be provided. The total water supply for the year would be stored during freshet (June/July). At build-out, it would not be possible to store the required 325,000 m³ in Melvin Lake during freshet in a 1-in-25-low-runoff year. Since only 160,000 m³ could be stored in Melvin Lake during freshet, Second Lake would be required to store an additional 165,000 m³. Thus, this alternative would require additional storage, and consequently increased dam height at both Melvin and Second Lakes. This would ensure that the entire annual water supply for the resort could be provided through the storage of unlicensed water. NGR noted that it would require an environmental assessment to address the impacts related to raising the level of Second Lake.

NGR formally acknowledged that the entire potable water system would be designed and built to municipal standards, and owned, operated and maintained by SLRD. The resort would retain ownership of the golf course irrigation and snowmaking water systems. NGR also reconfirmed that chloramine would not be used as a disinfectant for the treatment of potable water at the resort.

With respect to water conservation measures, NGR committed to require all commercial and private structures in the resort to utilise modern water-conserving fixtures, to meter all water users and to use a volume-based tariff, as well as to provide ongoing water conservation education programs.

The design of the potable water system would make allowances for fire-fighting and emergency use. All structures would be required to have fire sprinkler systems which would allow the distribution system to be sized for lower fire flows. Water storage for fire fighting and emergency use would be stored in the potable water distribution system reservoirs. Fire storage for the resort would be approximately 1,500 m³, which would be negligible in terms of annual water demand at build-out.

Agency Review Comments on Project Report (6.2.2.1)

In its November 1, 1999 letter, MELP noted general satisfaction with the treatment of the water supply issue in the project report. However, MELP did request that NGR develop a comprehensive water monitoring program to the satisfaction of the RM-Water prior to referral of the project to ministers. This monitoring program would need to include: water flow at the outlets of Melvin Lake and Second Lake prior to development; completion of

the detailed water availability analysis; developing a diversion/return flow database, based on quantities of water being diverted from Melvin Lake and the stream flows resulting from liquid waste discharge; and analysing monitoring results to determine any impacts to discharges from Melvin Lake and Second Lake, in Melvin Creek and/or at the confluence of Melvin and Cayoosh Creeks.

SLRD, in its correspondence of July 28, 1997, October 12, 1999 and May 2, 2000, accepts NGR's position that the water supply system would be built and operated as a municipal system. SLRD is prepared to own and operate the public water system, whatever the size of the demand which the system needs to accommodate. As noted in the meeting minutes of the July 28, 1997 SLRD Regional Board meeting, "...the SLRD's position on sewer and water systems is that these systems are to be owned and operated by the SLRD from the outset..." On April 12, 2000, SLRD further clarified its jurisdiction with respect to management of water supply systems. Section 798(1)(b) of the *Municipal Act (MA)* provides for a regional district to establish and operate, by bylaw, a local service for the supply, treatment, conveyance, storage and distribution of water. It is implicit in this authority that, if the regional district operates the water supply system, it will own the system. Section 938 of the *MA* authorises a regional district to establish a bylaw to regulate, and require the provision of works and services in respect of, the subdivision of land. A subdivision servicing bylaw under section 938 of the *MA* may require that a water distribution system be provided, located and constructed in accordance with standards established in the bylaw.

Proponent's Responses to Agency Comments on Project Report (6.2.2.1)

In its January 12, 2000 correspondence, NGR provided a listing of its commitments pertaining to water supply management. Specifically addressing MELP's outstanding concern, NGR committed to develop a water monitoring program to the reasonable satisfaction of the RM-Water. NGR further outlined the components of the proposed water monitoring program, which were essentially those requested in MELP's November 1, 1999 letter.

Follow-up Exchanges (6.2.2.1)

On January 26, 2000, MELP provided further written comments. Generally, MELP raised no new concerns with this issue, but did request NGR to commit to develop a water quantity monitoring program and availability analysis. MELP also reiterated the need for NGR to commit to complete a study of the potential for impacts resulting from storage in Second Lake prior to applying for a water licence on Second Lake.

NGR, through its consultant, Urban Systems, provided subsequent (February 10 and February 29, 2000) revisions of its January 12, 2000 commitments summary document. Based on the revised commitments, MELP indicated in its March 20, 2000 correspondence to EAO, that all of its concerns with respect to water supply issues had been addressed.

NGR has not suggested that it would need to consider water recycling to supplement other water sources. In response to an inquiry, MoH has clarified, in May 24, 2000 correspondence, that, should water supply shortages or other considerations lead NGR to consider water recycling as an option in the future, it should consult with the Chief

Environmental Health Officer with MoH's Thompson Health Region. Restrictions and conditions on use of recycled water could be imposed, including monitoring, cross-connection prevention strategies and high levels of treatment. MoH's jurisdiction over water supply arises from the *Safe Drinking Water Regulation*, pursuant to the *Health Act*.

The UMA Engineering report submitted March 28, 2000 on behalf of the St'at'imc Chiefs entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues* raised several issues pertaining to water supply. In its April 22, 2000 correspondence to EAO, NGR responded to the water supply issues raised by the St'at'imc. Through its responses, NGR introduced a discussion of options for meeting domestic water supply needs. The nature of these responses resulted in renewed interest from MELP regarding the proponent's intentions for resort water supply. A series of discussions ensued during May/June 2000 to resolve these concerns.

At issue was the introduction of water supply options. MELP had agreed to a water supply/delivery plan based upon that which was presented in the project report and subsequent documentation (Jan/Feb 2000). As described earlier in this section, the proposed system would rely on storage and diversion structures on Melvin and Second Lakes to provide the required water supply to meet resort needs at full build-out. In order to avoid impacts on downstream water licence-holders, these storage structures would be constructed so that the entire water supply for the year could be stored during freshet (June/July). However, in NGR's responses to the St'at'imc report, it indicated that its preference was to prove up enough groundwater sources to accommodate domestic water supply, at least in the early years of development. Further, if sufficient volumes could not be obtained from groundwater sources, NGR's second preference would be to construct a smaller-than-proposed dam, and utilise existing flows throughout the year. NGR noted that downstream flows would be maintained or increased under this scenario, due to the accompanying discharge of wastewater into the ground. NGR indicated that the proposal to store all water supply in Melvin and Second Lakes during freshet was its least-favoured option, but was proposed in order to demonstrate to MELP that there would be sufficient water to satisfy resort demand even at the resort's ultimate build-out phase.

After a series of discussions between MELP regional water staff and NGR's engineers (Urban Systems), MELP was satisfied that the storage of total water volume requirements at build-out may not be required if it can be proven that post-development flows in Melvin Creek are equal to pre-development flows or that wastewater discharge is equal to waterworks usage. Agreement was reached that NGR will proceed with the water supply system as proposed in the project report, unless it can demonstrate, to MELP's satisfaction, that the alternative system is acceptable. Based upon this agreement and the commitments made by NGR, MELP indicated it had no further concerns with this issue.

Another issue about which MELP sought clarification was the question of SLRD's role in regulating the water supply system. On June 21, 2000, SLRD clarified that:

- it is satisfied with NGR's water demand analysis at a conceptual level, subject to closer examination at the more detailed design stage of project planning;
- SLRD considers the issue to have been addressed adequately for EA review purposes; and
- NGR will build the waterworks system to acceptable standards, and SLRD or another local government body will take over ownership when construction is completed.

SLRD noted its intent to prepare a subdivision servicing bylaw which specifies design and construction standards, management responsibilities, etc. in advance of construction.

Public Comments on Issue and Project Committee's Position (6.2.2.1)

1. PUBLIC COMMENT:

There is little information to date on projected water use.

PROJECT COMMITTEE POSITION:

Preliminary water use projections were provided in the project report. The project committee determined that water use projections have been adequately addressed for EA-level review purposes - see this section.

2. PUBLIC COMMENT:

Will there be snowmaking equipment, and if so, what volumes of water will be needed for this purpose?

PROJECT COMMITTEE POSITION:

Snowmaking is intended, and the volumes of water proposed for snowmaking at the resort were described in the project report. A diversion of up to 25,000 m³/year from Upper Twin Lake is proposed to supply a snowmaking system.

3. PUBLIC COMMENT:

Project should not obtain any of its water supply from outside the Melvin Creek drainage.

PROJECT COMMITTEE POSITION:

The project committee has determined that, although Upper Twin Lake is part of the Haylmore drainage, the limited withdrawal of water for snowmaking proposed by NGR would have little impact on Haylmore Creek, and was acceptable.

4. PUBLIC COMMENT:

Concerned that there will not be an adequate water supply for the resort.

PROJECT COMMITTEE POSITION:

Based on careful analysis, the project committee is satisfied that NGR has demonstrated an adequate water supply to meet the needs of the resort - see this section.

5. PUBLIC COMMENT:

Water supply issues are manageable - they are not 'show-stoppers'.

PROJECT COMMITTEE POSITION:

The project committee agrees, having concluded that water supply issues have been adequately addressed for EA-level review purposes - see this section.

First Nations Comments on Issue and Project Committee's Position (6.2.2.1)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The first section of the report evaluated, from the perspective of the St'at'imc communities, the infrastructure development plans of the proposed resort. Water supply issues were included in the discussion.

1. FIRST NATIONS ISSUE:

Water demand figures should be revisited and confirmed by NGR. The project's estimated water demand appear too high, and it may be in the interests of St'at'imc communities to use more realistic figures in any agreement. In calculating water demand, NGR's engineers, Urban Systems, used an estimate of 1,057,267 total winter overnight visitors during winter months. In addition, some 428,000 day visitors, including employees, were assumed to be the maximum numbers at final build-out. Summer usage was established at approximately 40% of the winter total, which is consistent with traffic forecasts.

PROPONENT RESPONSE:

These winter visitor totals are well above the figures used in the marketing assessment. At year 10, the marketing assessment estimates ca. 349,000 overnight visitors and 194,000 day visitors. However, these revised marketing figures are below NGR's original forecasts, which anticipated 560,000 overnight visitors, with ca. 180,000 day visitors, using a high growth model. Whether or not the resort could double these visitations at some future date is a difficult question. However, at year 20, resort visitation will certainly be well above the 10-year forecasts. Given information now available, the figures used for water demand estimates may indeed be higher than the actual requirements. However, in planning for project build-out, engineers must consider the maximum possible utilisation, to be certain that adequate domestic water supply is available. While maximum resort utilisation may not be reached for 20 to 30 years after project start-up, it is reasonable to take a cautious approach, not under-estimating water demand. Urban Systems agrees with UMA that water demand figures are high when one considers 10-year and 15-year skier visit forecasts, but reaching full build-out capacity was estimated to be a long-

term process, perhaps taking even longer than 30 years. Possibly actual build-out may be 25% to 30% less than Urban Systems has forecast, meaning less water demand, and therefore lower water quantity impacts than were documented in the project report. If UMA is correct, the resort's water demand impacts will be lower than forecast by NGR.

PROJECT COMMITTEE POSITION:

The project committee has stressed the importance of demonstrating that an adequate water supply will be available at full project build-out, and agrees with the engineering assessments that the demand factors used are probably conservative. Actual permitted water withdrawal volumes will be adjusted over time as the resort evolves, and tailored to demonstrated resort needs.

2. FIRST NATIONS ISSUE:

A detailed environmental study should be undertaken to determine the impact on Melvin Creek of eliminating flows from Melvin Lake by drawing it down, and the measures necessary to mitigate the effects.

PROPOSER RESPONSE:

NGR proposes (and commits) to measure all flows from Melvin Lake and along Melvin Creek at various points, and near its confluence with Cayoosh Creek. Although NGR has predicated its EA process application on surface water sources (see NGR's response to item #4), it hopes to prove up enough groundwater sources, once there is road access to the resort site, such that it will be feasible to accommodate domestic water supply needs from groundwater sources, at least in the early years of development. If sufficient volumes cannot be obtained from groundwater sources, Melvin Lake would be used as a domestic water supply reservoir. Even if this occurs, damming and reservoir storage with drawdowns is not envisaged unless water supply is not available from groundwater sources and normal lake levels. If Melvin Lake proves to be the selected option for domestic water supply, NGR's preference would be to construct a small dam, and utilise existing water flows. NGR and its consultants believe that downstream flows would be maintained or increased, due to the accompanying discharge of wastewater into the ground. In order to prove that the downstream flows of Melvin and Cayoosh Creeks would not be negatively affected by this use, NGR would undertake monitoring to establish flow base data pre- and post-development. The other option for utilizing Melvin Lake as a storage reservoir would involve constructing a larger dam, and storing all domestic water requirements during the spring freshet. This concept was proposed to illustrate that, even at the resort's ultimate build-out, with maximum water demand, there is sufficient water within the Melvin Creek drainage area to supply domestic water to the resort without impacting downstream water users. Demonstrating this was requested by MELP water resources staff. Prior to application for any required lake damming, NGR is prepared to carry out an EA study of any proposed damming and drawdown use of Melvin Lake, if and when that should occur.

PROJECT COMMITTEE POSITION:

The sections in NGR's project report addressing the impacts of the proposed water supply, which is based on surface water sources, were reviewed by MELP's Regional Water staff, and were found acceptable. MELP advised the project committee that it does not entirely agree with NGR's response on groundwater sources. MELP notes that, in its project report, while NGR did declare an interest in supplying the resort from groundwater in the early years of development, it also acknowledged that groundwater quantities were limited. Moreover, MELP has based its review of surface water sources on water withdrawals following impoundment construction, and did not evaluate the option of withdrawals from groundwater. In any case, NGR has demonstrated, to MELP's satisfaction, that at full build-out, it would be possible to provide an adequate water supply for the resort development.

3. FIRST NATIONS ISSUE:

The feasibility of increasing the storage of both Second Lake and Melvin Creek by the extent noted under the option of storing all water requirements during the freshet season should be further investigated. This option has a lower impact on Melvin and Haylmore Creeks themselves, but the impacts of constructing impoundment structures may be more significant. During this additional study, more detailed topographical information should be provided, so that the extent and impact of the structures can be assessed.

PROPONENT RESPONSE:

As outlined in the previous response, NGR's preferred option for surface water storage would make use existing flows, rather than relying on spring freshet for all water storage requirements. Further, as noted in the Urban Systems report, damming of Second Lake would only be used for domestic water if damming and reservoir use of Melvin Lake did not meet supply requirements. Except for possible snowmaking use, Second Lake is intended only as a back-up proposal. UMA notes its agreement that there would be little impact on downstream users, and Urban Systems has noted that there would be little impact on the upper Melvin Creek area, since it is non-fish-bearing. In addition, Urban Systems notes that, as a result of the 6-to-8-month winter season in the upper valley, present flows from Melvin Lake are predicted to be very low, and much of the existing Melvin Creek flow is believed to originate from groundwater sources downstream of Melvin Lake. Average outflows from Melvin Lake in the winter months were estimated by Urban Systems (August, 1999, Figure 1) to be approximately 3 l/second. It is not clear how, as suggested in UMA's report, Haylmore Creek would be impacted by the domestic water supply proposal, since proposed use of Upper Twin Lake is restricted to early-season snowmaking.

PROJECT COMMITTEE POSITION:

MELP is satisfied with NGR's commitment to additional studies before storage is developed at Second Lake. NGR has committed to minimize the height of water storage structures, whenever possible, to minimize the impacts on riparian habitat. MELP's original review and endorsement was based on the option to store all of the required water during spring freshet, and during the period of the year when unlicensed water is available (June and July), since it was the only option proven

adequate to provide for water supply demands at final resort build-out. However, through subsequent discussions between MELP Regional Water staff and NGR's engineers, it was agreed that the storage of total water requirements at build-out may not be required *if* it can be proven that post-development flows in Melvin Creek are equal to pre-development flows, or that wastewater discharge is equal to waterworks usage. If NGR does choose to rely entirely on surface water sources, and stores all water during spring freshet, then at build-out, Second Lake would be needed in extreme low-flow years. As mentioned previously, MELP is satisfied that NGR's commitment to undertake additional studies before storage is developed at Second Lake adequately addresses the issue.

4. FIRST NATIONS ISSUE:

Groundwater would be a preferred source for the resort's water supply, and a firmer commitment should be made to use this source - this will require a more detailed investigation to assess potential and to identify environmental concerns.

PROPONENT RESPONSE:

NGR has predicated its EA application entirely on surface water supply sources. While, in its project report, it did mention its intention to locate and use groundwater sources in at least the early years of development, the road access necessary to prove up groundwater sources is not yet in place. NGR agrees with UMA's comment, and is committed to first proving up as much groundwater as possible, intending to use the storage reservoirs for back-up purposes. NGR understands that, if following an approval of the project, a switch to groundwater sources is proposed, further EA review will be necessary.

PROJECT COMMITTEE POSITION:

The project committee has insisted, from the outset of EA review, that NGR demonstrate that adequate water supply exists to accommodate the project's water demands at full build-out. NGR's EA application has opted to demonstrate that surface water sources are adequate for this purpose. Assuming that surface water sources are used, as proposed, then as part of the CASP master planning process, NGR is expected to undertake a hydrological study of the watershed which will integrate hydrology and channel morphology so as to understand how the future stability of the Melvin Creek channel may be impacted by the proposed development. If the project is granted an EA certificate, and then subsequently, during initial project construction, NGR proposes to utilise groundwater to meet the project's water demand, the project committee recommends that conditions in the EA certificate should provide for further EA review of the effects of groundwater use. An amendment of the EA certificate may then be necessary. See also the project committee's response to item #2, which expresses some reservations about the availability of groundwater.

5. FIRST NATIONS ISSUE:

There is insufficient information available to assess the implications of using the Haylmore Creek water source. A detailed environmental study should be undertaken to assess the impacts on the Upper Twin Lake outflow-creek resulting from eliminating flows from the lake by drawing it down during certain times of the year.

PROPONENT RESPONSE:

Haylmore Creek is currently licensed for irrigation purposes and three domestic licenses. October and November snowmaking drawdowns would occur during a period when the only significant recorded users do not use the water supply. NGR has committed not to use this source during the period in which irrigation occurs. October and November are historically high precipitation months in the Coast Range, and the impact of the two-month drawdown in a drainage basin which is only 0.47% of the Haylmore drainage is minimal. The low volumes used for snowmaking purposes would not be significant in terms of downstream Haylmore Creek flows. The amount of water to be used for snowmaking is 25,000 m³, or 0.04% of the Haylmore drainage. Given rain, fall snow melt and groundwater sources, Upper Twin Lake should be maintained near its natural levels.

PROJECT COMMITTEE POSITION:

In addition to the five irrigation licences on Haylmore Creek mentioned by NGR in its response, there are three domestic (whole-year use) licenses downstream, plus two outstanding applications on the tributaries. Having said that, however, MELP concurs that the low volumes to be used for snowmaking would not be significant in terms of downstream Haylmore Creek flows. It is satisfied that using the lake as a supply for snowmaking during the winter period would have minimal impact. Further study at this time is not warranted.

6. FIRST NATIONS ISSUE:

Greater detail should be provided on the topography of Second Lake, and the impact of an impoundment structure should be investigated.

PROPONENT RESPONSE:

As noted in NGR's response to item #3, it is unlikely that Second Lake would be required for domestic water supply in the first ten-year period, so that damming and impoundment structures for domestic use are probably not required until near the final build-out period, if required at all. As UMA noted, Urban Systems has been very conservative, and may have over-estimated the actual water supply requirements. Complying with this request is better left until such time as it is clear that Second Lake is needed as a domestic water source.

PROJECT COMMITTEE POSITION:

MELP has advised the project committee that, with respect to the need for Second Lake as part of the domestic water supply, NGR's response is somewhat misleading – see the project committee's response to item #3. However, MELP is satisfied with NGR's commitment to undertake additional studies before any storage is developed at Second Lake.

Proponent's Commitments Relevant to Issue (6.2.2.1)

NGR committed to completing the following to address water supply concerns (all applicable activities to be completed to the satisfaction of the MELP RM-Water):

- commence diversion of water from the Haylmore watershed after the irrigation season;
- develop a water monitoring program to the satisfaction of the RM-Water (**Note** - The program is to include the collection of baseline data (to be initiated following completion of the access road), and collection of data during construction and operation);
- monitor stream flow at (or near) the outlet of Melvin and Second Lakes for a designated period prior to development;
- complete a detailed water availability analysis on the Melvin Creek and Second Creek watersheds;
- establish a database by monitoring quantities of diversion and return flows;
- analyse the results of the monitoring to determine whether the resort development has an impact on flows from Melvin and/or Second Lakes, Melvin Creek and/or Cayoosh Creek;
- store annual water requirements during the period of the year when unlicensed water is available (June & July) and when the streams are in freshet conditions (**Note** - Storage of total requirements at build-out may not be required if it can be proven that post-development flows in Melvin Creek are equal to pre-development flows, or that wastewater discharge is equal to waterworks usage);
- minimize the height of water storage dams, whenever possible, to minimize the impact on riparian habitat;
- maintain existing flows in Melvin and Cayoosh Creeks, except during freshet, when creek flows would be reduced during reservoir refilling;
- develop groundwater sources to the greatest extent possible, which will postpone and minimize the need to store/divert surface water sources;
- study impacts resulting from storage, prior to applying for a water license for Second Lake;
- design, build and operate the potable water supply system to municipal standards, with ownership and operation retained by the SLRD (**Note** - Partnering between SLRD and NGR could be available to facilitate its efficient operation and maintenance);
- develop and implement a full water conservation program for the resort, including the mandatory use of modern water-conserving plumbing fixtures, and an ongoing public education program directed at commercial operators, residents and guests;
- institute a fully metered delivery system, with a volume-based user charge;
- utilize gravity to pressure water systems;
- minimize forest clearing requirements for pipelines when not on a roadway, by using skiway alignments wherever possible;
- investigate the potential of using reclaimed water for irrigation, snowmaking and/or toilet flushing;
- institute a mandatory fire sprinkler system in all public and private buildings, including single-family structures;
- utilise high-efficiency motors for all pumping requirements;

- consider filtration as a second barrier to pathogens and turbidity for the drinking supply system;
- develop and implement measures to ensure that water flows through the lakes when there is no authorization to store water;
- as part of the CASP ski area master planning process, undertake a hydrological study of the watershed which will integrate hydrology and channel morphology, so as to understand how the future stability of the Melvin Creek channel may be impacted by the proposed development (**Note** - This study will examine:
 - the effects of logging, roads, other paved and developed areas, snowmaking and storage on stormwater flow regimes, the natural hydrograph and long-term channel stability for Melvin Creek;
 - the effects of riparian logging on changes to the rate of large woody debris (LWD) recruitment and the long-term channel stability of Melvin Creek; and
 - changes to the rate of LWD recruitment to the channel so as to understand how future stability of the Melvin Creek channel may be impacted by the proposed development); and
- avoid the use of chloramine for disinfection of drinking water.

Status of Issue at Time of Referral to Ministers (6.2.2.1)

The project committee considers water supply issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Water supply* - NGR has proposed a water supply system which will ensure the long-term reliability of the quality and supply of water to the resort community and the resort's operations, without adversely affecting either fisheries values or downstream water licensees.

6.2.3 FISH AND WILDLIFE RESOURCES
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6.2.3.1 FISHERIES RESOURCES

issue(s) (6.2.3.1)

This issue included the direct and indirect impacts of project development on fisheries values, involving the need for:

- detailed assessments of fishery impacts and proposals to manage and mitigate any fishery impacts;
- the management of resort effluents associated with solid and liquid waste disposal; and
- the overall management of surface drainage and erosion products.

Content of Application (6.2.3.1)

An August 1996 report entitled *Melvin Creek Fish and Fish Habitat Overview Assessment*, prepared by ARC Environmental Inc., was included in section 13 of the application. The objective of the study was to describe stream habitat and fish communities in Melvin Creek, and to note any unique or critical aquatic habitat values. The report concluded that Melvin Creek was devoid of fish populations due to a gradient

barrier near its confluence with Cayoosh Creek. It further noted that, although resort development should be undertaken in a manner that protects the integrity of the riparian community, there were no apparent or critical habitat values which would restrict development.

Agency Review Comments on Application (6.2.3.1)

In its February 24, 1997 letter, MELP noted several outstanding concerns with respect to this issue. MELP acknowledged that the fisheries values in Melvin Creek were inventoried, but was dissatisfied with the treatment of lower Melvin Creek. In addition, MELP requested that NGR undertake an inventory of fisheries values for Cayoosh Creek, upstream and downstream of its confluence with Melvin Creek. Also needing to be addressed were the potential water quality impacts on lower Melvin Creek and Cayoosh Creek associated with project construction activities, as well as the potential impacts resulting from bridge construction across Cayoosh Creek.

DoE commented on the application in its February 22, 1997 letter. It noted that the application lacked detailed analysis regarding wastewater treatment, runoff and other activities that may impact downstream waters frequented by fish. DoE requested further details illustrating that, during construction, and through development, the project would not result in the introduction of any substances into watercourses which are potentially deleterious to fish.

In its letter dated March 3, 1997, DFO commented that the fisheries impact study included in the application should have included an assessment of fish presence in the lower reaches of Melvin Creek. DFO also requested that more detail should be provided regarding components of the resort development which may affect water quality, including road construction, riparian zones, waste treatment and disposal and sediment control.

Proponent's Responses to Agency Comments on Application (6.2.3.1)

NGR submitted two separate letters from ARC Environmental Ltd., dated May 12, 1997 and May 21, 1997 respectively. The first of these was written to address the concerns identified by DFO with respect to fisheries and aquatic resources, and the second, to address those concerns raised by MELP regarding potential impacts on water quality and aquatic organisms. The first (May 12, 1997) letter briefly described the potential effects on fisheries values of the project components identified by DFO, and outlined general measures with which to address these effects. Included in the second (May 21, 1997) letter was recognition of the need to carry out baseline monitoring prior to project initiation and throughout all phases of development. This would be necessary to identify pre-development environmental conditions, and subsequently, to set water quality objectives and ensure mitigation measures are controlling impacts.

In its response to MELP concerns dated May 15, 1997, NGR noted that impacts on water quality from the project would be kept to a minimum through control measures such as siltation ponds. With respect to the bridge crossing over Cayoosh Creek, NGR stated that bridge footings would be located outside of the creek itself, and above high-water levels. NGR also addressed related issues, including water quality, riparian

areas, pollution prevention, urban and stormwater drainage and waste management. These related issues are discussed more fully in other sections of this report.

Project Report Specifications (6.2.3.1)

NGR was required to augment the fish habitat overview provided in its application by completing a fishery and fish habitat assessment for Melvin Creek, including the lower reaches near its confluence with Cayoosh Creek (D.3(A)#1). The potential impacts on fish and fish habitat and stream water quality were to be identified in detail, and related to the various aspects of project development (D.3(A)#2). Strategies to preserve water quality, fish and riparian habitats, and to avoid or mitigate impacts from erosion and the discharge of silt-laden runoff were required. NGR was to provide habitat and infrastructure mapping (1:20,000) including access road alignment and stream crossing locations (D.3(A)#3). NGR was also required to commit to undertaking all resort-related activities which posed a risk to aquatic organisms to the satisfaction of review agencies, and in accordance with an approved mitigation plan (D.3(A)#4). This needed to include the commitment to hire a qualified on-site monitor who would report directly to regulatory agencies, have the authority to stop work and make minor on-site design/construction amendments to prevent negative impacts.

The final specification (D.3(A)#5) was conditional on whether sport fish were found in lower Melvin Creek. If so, NGR was required to determine the existing minimum summer discharges from Melvin Creek, and commit to maintain this minimum flow. Furthermore, NGR was required to commit to develop, prior to construction of any water control measures, procedures which would ensure this minimum flow.

Issue Treatment in Proponent's Project Report (6.2.3.1)

Included in the project report (Volume 1, section 6) were the results of four field visits which contributed to the fish and fish habitat assessments undertaken by ARC Environmental Ltd. These took place in August 1996 and March, July and November 1998 respectively. Fish and fish habitat were assessed in Melvin Creek, and in Cayoosh Creek adjacent to Melvin Creek, to determine fish distribution, habitat values and sensitivities to proposed development activities.

The reports noted that upper Melvin Creek was devoid of fish populations, due to high gradients (average 30%) and falls (drops of up to 3 m) in Reach 2 which isolate most of Melvin Creek from the fish-producing waters of Cayoosh Creek. However, habitat values throughout upper Melvin Creek are suitable for salmonid rearing and would most likely support fish populations if fish could gain access.

Rainbow trout were found to be utilising habitat in Reach 1 of Melvin Creek. Age analysis indicated that the fish were either one or two years of age. NGR concluded that these fish were likely to enter Melvin Creek post-freshet, when water velocities within Melvin Creek decline to values that are within ranges tolerated by rearing trout, and instream flow conditions permit active movement and foraging.

With respect to Cayoosh Creek, the reports confirmed the availability of rearing habitat for whitefish, and also complex habitat that could be used by rainbow or Bull trout along cutbanks and associated large woody debris (LWD). Sampling confirmed the presence

of rainbow trout and mountain whitefish, however no Bull trout were found. No critical spawning or overwintering areas were noted in the Cayoosh Creek study area. Conductivity was relatively higher in Melvin Creek than Cayoosh Creek, which suggests slightly higher productivity in Melvin Creek, which was deemed to at least partially explain why rainbow trout chose to move upstream into the system.

With respect to the conditional specification regarding the maintenance of minimum flows, NGR noted the possibility that summer low flows are not the instream factor which limits production in lower Melvin Creek. This is likely more limited by the high velocities associated with spring freshet. This being the case, NGR concluded that the requirement to maintain flows at existing levels may not be a biological necessity. In spite of this conclusion, NGR committed to preserving summer low flows within lower Melvin Creek to maintain fisheries productivities, but noted that the magnitude of the flows should be based on biological need, which may not be related to current summer low flows. NGR suggested that this be further discussed with MELP and DFO.

The report stated that fish which overwinter in Melvin Creek rear in pools within Reach 1. To ensure that no risks are imposed on fish overwintering here, water use should be managed to maintain winter habitat conditions, in particular the depth of water in pools. Melvin Lake is to be the source for the resort's water supply. According to Urban Systems, this will only affect a small percentage of the basin, and it is not expected that winter habitat impacts will be an issue, since flows/pool values are not expected to be diminished. However, if flow monitoring detects a reduction in winter flow values, and if these changes correspond to a reduction in winter habitat values, flow augmentation will be required. Options for this include pumping of water from Cayoosh Creek into the upper section of Reach 1 of Melvin Creek, or the more preferable option of constructing a dam on Second Lake to provide freshet storage and winter releases to maintain Melvin Creek flows.

With regards to Bull trout, it is possible that they could be present in Cayoosh Creek downstream of Duffey Lake. If so, measures directed at protection of habitat values for rainbow trout are expected to also protect values for Bull trout.

With regards to fish habitat mapping, NGR explained that habitat assessments and appropriate monitoring and/or mitigation plans would be completed once the final access road alignment is finalized. Habitat sensitivities and slope stability risks would be incorporated into detailed road alignment work. NGR reiterated that impact management in the upper drainage would concentrate on controlling erosion and sediment impacts, while the focus for lower Melvin Creek and Cayoosh Creek would be stream crossings and maintaining existing habitat values. NGR committed to avoid in-stream works wherever possible, but if necessary, to work within the prescribed instream work window with an environmental monitor present. NGR reiterated its commitment to hire an on-site environmental monitor who would be acceptable to relevant agencies. NGR noted that site planning for the resort would consider appropriate riparian setbacks along watercourses, as well as runoff control within the development. NGR referenced the EMP (included in Volume 1, section 4 of the project report), since it identified how construction-related activities would be managed.

Good project design and construction practices will be used to preserve water quality by preventing erosion and sediment inputs. On-site monitoring will be conducted during construction activities to ensure environmental protocols are followed.

Water quality and quantity baseline data will be collected for a two-year period prior to development, and will be used to monitor post-development flows, to ensure that fish and fish habitat values are maintained. Long-term monitoring of water quality and quantity will ensure that values will be maintained to sustain fisheries resources.

Agency Review Comments on Project Report (6.2.3.1)

Neither MELP nor DFO identified any further concerns with respect to the identification and assessment of fish and fish habitat, but there were some further comments with respect to potential impacts on water quantity and quality. In its November 1, 1999 letter, MELP requested specific commitments from NGR in order to protect water quality, such as following provincial guidelines with respect to maintaining urban runoff quality and protecting aquatic habitat. Both DFO and MELP expressed concern with the potential impacts of the resort development on riparian values (see the following section (6.2.3.2 - *Wildlife Resources*) for a discussion of riparian impacts/concerns). MELP also outlined specific criteria for a water monitoring program which it expected NGR to prepare to the satisfaction of the RM-Water.

Proponent's Responses to Agency Comments on Project Report (6.2.3.1)

In its letter dated January 12, 2000, NGR provided a summary list of commitments, as requested by MELP, which addressed potential impacts on water quality and quantity, and hence, responded to outstanding fisheries concerns. On January 18, 2000, NGR provided revised EMP and ESC documents. These documents further detailed the proposed measures to be undertaken during development of the project to minimize construction-related impacts on water quality. Further discussion of these issues can be found under various headings including *Water Quality Issues* (section 6.2.1.4), *Water Supply* (section 6.2.2.1), and *Liquid Waste Management* (section 6.2.1.2).

Follow-up Exchanges (6.2.3.1)

MELP's responses of January 21 and February 29, 2000 commented on NGR's updated commitments and revised EMP/ESC documents respectively. Generally, MELP did not raise any new concerns with respect to water quality or fisheries values. Rather, it reiterated some concerns from its November 1, 1999 letter which were not addressed fully. This was facilitated by providing additions, revisions and suggested changes to the wording of NGR's commitments, procedures, practices, specifications and conditions, as outlined by NGR in the aforementioned documents. In its March 14, 2000 correspondence, NGR acknowledged and accepted the changes and additions to the EMP/ESC document as proposed by MELP. Furthermore, NGR committed to detailing and finalising the EMP to the satisfaction of the RM-PP and the RM-FWH.

In its March 10, 2000 letter, DFO requested that NGR commit to abide by any mitigation required as part of an *NWPA* approval, if *EA* certification and *CEAA* approval are granted. NGR agreed to do so in its April 24, 2000 correspondence. In a letter dated May 31, 2000, CCG confirmed that Cayoosh Creek was deemed navigable for the

purposes of the NWPAs, and thus, approval must be obtained by the proponent prior to construction of the bridge over Cayoosh Creek.

Public Comments on Issue and Project Committee's Position (6.2.3.1)

1. PUBLIC COMMENT:

Access road will impact lakes, marshes and streams in the valley.

PROJECT COMMITTEE POSITION:

Potential impacts on water quality, riparian habitat and fisheries values are considered to have been adequately addressed for EA-level review purposes - see this section, and also sections 6.1.2.1 (*Access Road Location and Design Issues*), 6.2.1.4 (*Water Quality Issues*); and 6.2.3.2 (*Wildlife Resources*).

2. PUBLIC COMMENT:

It is difficult to understand how Cayoosh Creek can be rated as 'navigable'.

PROJECT COMMITTEE POSITION:

The determination of navigability falls under federal jurisdiction, specifically the mandate of DFO (Canadian Coast Guard). CCG advises that, in order to be considered navigable, a waterway must be capable, in its natural state, of being navigated by floating vessels of any description, for the purposes of transportation, recreation or commerce. With respect to this project, CCG originally designated Cayoosh Creek as being navigable based on the fact that it had authorised prior works over the creek under the NWPAs. The designation was confirmed during a site visit on May 25, 2000, at which time it was determined that the creek is capable of being navigated by small vessels such as rafts, canoes and kayaks.

First Nations Comments on Issue and Project Committee's Position (6.2.3.1)

A. Impacts on Traditional Use of Fisheries by First Nations (Compton Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Cultural Heritage Study - Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key Points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. The report contained only limited ethnozoological information, and none of the documentation reviewed by the St'at'imc consultant contains site-specific information

about St'at'imc occupation or use of the Melvin Creek area. Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area, including two species of fish – rainbow trout and mountain whitefish, neither of which are considered rare. The report provides little insight into how these two species are ethnobiologically significant. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area, including some less economically valuable fish species.

1. FIRST NATIONS ISSUE:

[Note - The Compton report did not specifically raise fish impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

If sediments were to be released by project development, and they traveled downstream, there would be some potential for impacts on fish populations. However, NGR has committed to several measures to address and reduce water quality impacts associated with project construction, operation and maintenance. Thus, while actual levels of risk to these fish populations, if no mitigation measures were implemented, are difficult to estimate, the project committee is satisfied that the mitigation measures proposed and committed to by NGR should adequately minimize adverse impacts on species such as rainbow trout and mountain whitefish.

B. Impacts on Traditional Use of Fisheries by First Nations (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

With respect to fisheries, the report mentions that St'at'imc people participated freely in trout fishing, and that salmon fishing was a managed activity.

1. FIRST NATIONS ISSUE:

[Note - The Fountain report did not specifically raise fish impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

As noted above, in response to the Compton study, the project committee is satisfied that mitigation measures proposed and committed to by NGR should adequately minimize adverse impacts on fish species.

C. Golf Course Impacts

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The first section of the report evaluated, from the perspective of the St'at'imc communities, the infrastructure development plans of the proposed resort. Water quality issues were included in the discussion.

The report identified the following issues:

1. FIRST NATIONS ISSUE:

NGR should commit to meeting the Best Management Practices outlined in the Fraser River Action Plan (FRAP) document entitled *Greening Your BC Golf Course: A Guide to Environmental Management*. There should also be a commitment to ongoing monitoring of soils, groundwater and surface water to ensure compliance with accepted levels of fertiliser and pesticides.

PROPONENT RESPONSE:

NGR has committed to complying with management planning and environmental specifications for golf courses as stipulated by MELP. In addition, NGR has agreed to monitor soils and surface waters to maintain acceptable levels of water quality.

PROJECT COMMITTEE POSITION:

The project committee concurs with NGR's response, and further notes that NGR has committed to following the guidelines in the aforementioned FRAP report – see section 6.2.1.2 (*Liquid Waste Management*).

2. FIRST NATIONS ISSUE:

Prior to authorisation of the golf course, detailed management plans should be submitted, as recommended in the above-noted FRAP document.

PROPONENT RESPONSE:

Prior to golf course construction, NGR will submit a detailed golf course management plan, as suggested by UMA and stipulated by MELP.

PROJECT COMMITTEE POSITION:

As mentioned in the previous response, NGR has committed to adhering to the guidelines presented in the FRAP document. Detailed management plans for the golf course will have to be submitted by NGR, as part of the CASP ski area master plan, prior to any construction.

Proponent's Commitments Relevant to Issue (6.2.3.1)

In order to further address fisheries issues, NGR committed to the following (applicable commitments are to be implemented to the satisfaction of both DFO and MELP):

- manage water use associated with the development in a manner which will maintain habitat conditions, in particular the depth of water in pools in Reach 1 of Melvin Creek;
- control possible sediments which could put downstream fish values at risk;
- avoid works instream, wherever possible (**Note** - If instream work is required, it will be conducted during the appropriate instream work windows, which have least potential for fisheries impacts. Timing windows for instream works will be discussed with the appropriate agency contact(s). Work windows will relate to risks associated with downstream sediment transport to fish-bearing streams);
- provide alternative construction measures which may allow works to be carried out outside the instream work window to the satisfaction of the agency contact(s);
- undertake water quality and water quantity monitoring prior to, and in association with, development activities, to ensure that the quality of the fish habitat in Melvin and Cayoosh Creeks and fish populations in Cayoosh Creek and lower Melvin Creek are maintained;
- conduct baseline water quality and quantity monitoring for a two-year period prior to initiating development activities;
- undertake site-specific prescriptions for areas where sedimentation and erosion may become a concern for water quality, as outlined in the EMP/ESC (**Note** - These prescriptions are to be finalized once detailed engineering designs are prepared. Site plans will consider appropriate riparian setbacks along watercourses, as well as runoff control within the development);
- follow the *Guidelines to Protect, Maintain and Enhance Fish and Wildlife Habitat on and adjacent to the Proposed Golf Course Development and Existing Course Re-Development on Lowland Areas* for the proposed golf course;
- prior to golf course construction, submit a detailed golf course management plan for approval by MELP;
- ensure that the bridge crossing of Cayoosh Creek complies with the Canadian Coast Guard's *Navigable Waters Protection Act* (NWPA) requirements;
- provide final engineered access road alignment plans for road crossings and other encroachments into the riparian area to the satisfaction of the RM-FWH (**Note** - Once these plans are finalized, habitat assessments and appropriate monitoring and/or mitigation plans will be developed which are to be incorporated into the road alignment plans (as outlined in the EMP/ESC). This will include the development of site-specific prescriptions for areas where there are potential sediment and erosion concerns for water quality, sensitive habitats and slope stability risks);
- minimize riparian vegetation removal in riparian buffers at all crossing locations;
- employ an environmental specialist during construction for monitoring of construction activities (**Note** - The environmental monitor's primary responsibilities will be to:
 - provide input to the detailed designs;
 - be present on-site during all construction activities (including clearing and grubbing);

- during the preparation of the detailed design phase, prepare a Communication Plan which identifies contacts in the event of an environmental emergency;
- ensure that environmental management measures, controls and specifications are properly implemented as per the terms and conditions of approvals and permits;
- liaise regularly with regulatory government agencies as required;
- deliver environmental education and awareness programs to construction staff prior to and during on-site works;
- provide technical assistance, environmental information, direction and supervision on environmental matters to construction staff and government surveillance officers, as required;
- inspect all activities during construction to ensure compliance with terms and conditions of approvals and permits, and adherence to the wildlife and vegetation protection plan;
- document construction activities, using some or all of the following means: field notes, photographs, and video, particularly in sensitive areas;
- monitor water (including stormwater runoff), and effluent quality samples upstream and downstream of construction to assess effectiveness of mitigation strategies and compliance with all applicable requirements;
- prepare reports at regular frequencies which summarize activities and actions taken, and submit these reports to the appropriate agencies;
- ensure that contractors and/or the resort have accident contingency plans and materials in place (straw bales, siltation fencing, pumps, etc.); and
- review, comment on and monitor wildlife activities during construction (**Note** – This requires an appropriately qualified biologist);
- ensure reclamation plans are appropriate to revegetate sites to a stable condition;
- prior to construction, determine seasonal (including both winter and summer) minimum flow requirements for fish in Melvin Creek, using an appropriate scientifically defensible methodology, which is developed in consultation with MELP and DFO staff;
- develop appropriate mitigation measures to ensure maintenance of the determined seasonal minimum flow;
- install water quality/quantity monitoring station(s) two years prior to the resort's development to establish baseline data for pre- and post-development comparison; and
- if flow monitoring detects additional impacts on fisheries values, then implement mitigation (**Note** - Flow augmentation options presented include pumping of water from Cayoosh Creek into the upper section of Reach 1 of Melvin Creek, or constructing a dam on Second Lake to provide freshet storage and winter releases to maintain Melvin Creek flows).

Status of Issue at Time of Referral to Ministers (6.2.3.1)

The project committee considers fisheries issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- ***Fisheries*** – There are no fisheries in the upper Melvin Creek drainage (in the vicinity of the resort). Measures to protect water quality and flow volumes in Melvin Creek

will ensure that fisheries in Cayoosh Creek and Melvin Creek are not impacted by the resort, and that their sustainability will not be impaired.

- *Water quality* - Impacts on local and regional water quality from the development will be adequately addressed through NGR's commitments to develop and implement an Environmental Management Plan (EMP), Environmental Specifications and Conditions, Master Drainage Plan, water quality monitoring program and appropriate mitigative measures to reduce negative impacts on water quality.
- *Environmental management plan* - NGR has developed an EMP which outlines ongoing procedures and practices to protect the environment, including the use of an independent environmental monitor during construction and development of the proposed resort to reduce negative impacts.

6.2.3.2 WILDLIFE RESOURCES

Issue(s) (6.2.3.2)

The issue generally concerns the overall impacts of project development on wildlife resources. More specifically, it includes:

- completion of the baseline wildlife surveys and mapping necessary for adequate wildlife impact assessments;
- the detailed assessment of impacts on specified wildlife populations and habitats caused by development in the Melvin Creek drainage; and
- proposals for impact mitigation and management.

Content of Application (6.2.3.2)

An assessment of the impacts on wildlife from the proposed resort was included as part of the October 1993 *Environmental Impact Assessment of the Proposed Cayoosh Resort, British Columbia*, completed by LGL Ltd., which was submitted as section 11 of NGR's application. In that report, NGR addressed many of the expected impacts of the proposed resort project on wildlife and wildlife habitat.

Agency Review Comments on Application (6.2.3.2)

MELP wildlife staff, in a letter dated February 25, 1997, noted deficiencies in the level of wildlife information submitted in the application. Information was not considered adequate with respect to: (a) the infrastructure components or footprint of the resort; (b) specific impacts of the development on wildlife, guiding and trapping activities, and riparian values along upper Melvin Creek and its tributaries; (c) the impact of non-skiing recreational activities on wildlife and wildlife habitat; and (d) mitigation measures to reduce the identified impacts to an acceptable level. In particular, MELP identified two key species of concern for which more detailed information needed to be provided, mountain goats and grizzly bears.

Proponent's Responses to Agency Comments on Application (6.2.3.2)

As detailed in Appendix A to the project report specifications, NGR and its consultants engaged in a series of discussions with MELP in the spring and summer of 1997 in order to clarify and address MELP's concerns regarding wildlife resources. Through that

series of discussions, NGR's wildlife consultants had already agreed to many of the requirements subsequently outlined in the project report specifications pertaining to wildlife.

Project Report Specifications (6.2.3.2)

An extensive series of wildlife reporting requirements was included in section D.3(B) of the October 7, 1997 specifications. In late 1997, NGR raised questions and sought clarification with respect to the wildlife resources reporting requirements. Based on discussions between NGR and MELP in the winter of 1997/98, the project committee agreed to endorse proposed amendments which were deemed to provide more specific language on the amount of detail and scope of the wildlife studies required for EA review purposes. The proposed amendments were subject to a period of public review and comment in April 1998, and were confirmed in July 1998.

Overlay mapping by NGR of the infrastructure components (footprint) of the resort was required at a scale of 1:20,000 (D.3(B)#3). NGR was required to provide further information relating to mountain goats and bears. The requirements relating to mountain goats included completion of field surveys, population inventory and mapping of mountain goat special habitat features, while detailed ground work was expected during the maternity season in 1998, which at the time the specification revisions were developed, was expected to occur after NGR's project report had been submitted (D.3(B)#1). As well, NGR was required to consider and analyse all mountain goat data gathered through March 15, 1998, and commit to funding further mountain goat monitoring effort and intensity, including the radio-collaring of an additional six goats, in 1998 (D.3(B)#4). Finalisation of the details for a future mountain goat monitoring program (between March 31 and August 31, 1998) was also required (D.3(B)#5). With respect to bear assessments (D.3(B)#2), NGR was required to present data and information gathered to date, but also to commit to completing the following by March 31, 1999: map the results of field surveys, special habitat features and expected or potential movement routes at a scale of 1:20,000; undertake and map (at a 1:50,000 scale) an inventory of bear habitat and use in adjacent valleys within 5 km of the height-of-land boundaries of Melvin Creek; and, based on the above data and bear management objectives, develop a bear management plan (for both black and grizzly bears) which addresses all recreational uses originating from the proposed resort, both in and outside the Melvin Creek basin.

There were six specifications related to wildlife impact assessment (D.3(B)#6 to #11). In general, NGR was required to identify the potential impacts of the project on wildlife populations, wildlife habitat, and riparian areas, and provide a plan for the mitigation of these impacts. NGR was also required to undertake an assessment of red-listed and blue-listed species, based either on applicable inventories or on assumed presence and attendant worst-case scenarios (refer to specifications document for full details of requirements).

6.2.3.2.1 WILDLIFE RESOURCES - GENERAL

Issue Treatment in Proponent's Project Report (6.2.3.2.1)

The report acknowledges that the development is set in a beautiful, nearly pristine mountain valley which is believed to support wildlife and habitats which are of local (and in some cases) regional significance. NGR stated that its intent is to create a unique resort experience by minimising, to the greatest possible extent, the impacts of construction and resort activities on the area's environment. NGR provided updated information on wildlife resources in a June 1999 report prepared by Wildeor Wildlife Research and Consulting and LGL Limited, entitled *Wildlife, Habitat and Vegetation Assessment*, included in section 5 of Volume 1 of the project report. Based upon a combination of field observations (1990-98), and literature, file and interview information, the report concluded that the proposed resort development would have minor impacts on several wildlife species and habitats in the area.

Potential effects include habitat loss and alteration, disturbance, interference with wildlife movements, access for wildlife users and abusers, vehicle collisions, and interactions with introduced species. For most of the species, development would likely result in direct loss of individuals or reduction in local capacity to support individuals, but would not have significant implications for the regional Cayoosh Range populations. Population-level effects are possible for both mountain goat and grizzly bear, as a result of access for hunters and poachers and problem wildlife scenarios. By implementing identified mitigation and planned monitoring in support of adaptive management, demographic (population-level) effects on all species and individual-level impacts were expected to be minimized or prevented.

Suggested activities and actions included ongoing studies or pre-construction surveys to confirm or identify particular local species needs and options (for mountain goat, grizzly bear, black bear, Spotted Owl, Golden Eagle, Harlequin Duck), planning to minimize habitat removal and changes, timing construction events to minimize disturbance, appropriate routing of summer hiking trails, management of hikers and wildlife viewing opportunities, prohibition of helicopter-based and motorised recreation, sensitivity to wildlife during construction and logistical use of helicopters, and speed restrictions along roads. The proposal also included a long-term wildlife and habitat monitoring program. The intent was to document the local and broader effects of the resort development, so as to provide a basis for adaptive management (i.e. by documenting problems and changing policies or undertaking required enhancement measures). The location and footprints of the project development components were included in the Conceptual Master Plan map at a 1:20,000 scale.

An assessment of the potential impacts of the proposed resort development on riparian and wetland areas was presented in Volume 1, section 5 of the project report, and further discussed in Volume 2, section 4. NGR believes that the most significant environmental impacts will be the encroachment on (and probable loss of) riparian wetland habitat, particularly because there is very little flat land available in the upper Melvin Creek valley. NGR noted that of primary concern were the riparian areas adjacent to Melvin and Second Creeks, as well as the wetland areas in the upper valley. While the development would respect the 1-in-200-year floodplain requirements for the

management of floodplain issues, and a 15-m riparian setback (except in places, for road crossings, walking trails, sections of ski trail and lift base terminals), significant portions of the existing wetland area would be lost to development. The level of anticipated impacts on specific areas of wetland and riparian habitat were identified, discussed and presented in a table. Potential impacts from resort development on wildlife and wildlife habitat outside the Melvin Creek drainage were also discussed.

Categories of impacts and mitigation strategies for particular species (wildlife and vegetation), including red-listed and blue-listed species, were provided in section 5 of the project report. NGR noted that those strategies, and others recommended by regulatory agencies, would be incorporated into site-specific plans during the post-EA permitting stage.

Agency Review Comments on Project Report (6.2.3.2.1)

DFO and DoE (CWS) expressed concern with the treatment of impacts on wetlands and riparian habitat in the project report, particularly the loss of wetland/riparian/lake habitat in the upper Melvin Creek valley. Both DFO and DoE requested that NGR commit to: (a) setting aside the three wetland areas identified as being of highest concern as reserve areas; (b) developing a detailed wetland protection plan which would establish ways of minimising human disturbance to all of the retained wetlands; and (c) ensuring a biological consultant monitors the implementation of the wetlands protection plan. With respect to riparian areas, DFO and DoE recommended that the 15-m riparian buffer be considered an absolute minimum, and that it be widened whenever possible, and that human access to riparian areas be limited or restricted, particularly by aligning the Valley Trail away from the creek.

In its November 1, 1999 correspondence, MELP also identified several areas of concern regarding the project report's treatment of wildlife resource issues. With respect to riparian and wetland habitat, MELP stated that the conceptual drawings provided by NGR did not show the full extent of expected riparian impacts and proposed protection. MELP concurred that there would be significant impacts to these areas. In order to address this, MELP required that, as a condition of certification, NGR commit to mitigate impacts on riparian or wetland habitat values or, if mitigation to an acceptable level is not feasible, then compensate by means acceptable to MELP prior to creating the disturbance. MELP noted that further discussion between itself and NGR would be required to determine acceptable mitigation and compensation measures.

MELP noted that the impacts of human access on ecologically sensitive areas (e.g. the Green Valley wetlands) could be satisfactorily addressed with a commitment by NGR to ensure that these areas would be appropriately signed, and that associated pathways would be designed to minimize or discourage impacts.

MELP reviewers were generally satisfied with the way in which the various sections of wetland/riparian habitat were categorized, rated (according to level of concern) and addressed in the project report. However, MELP noted that certain areas of wetland/riparian habitat (polygons 4 and 5) should have been rated as an area of high concern, rather than of medium concern, because of the significance of values documented by NGR's consultant. NGR should have proposed adequate measures to

reduce the adverse impacts on areas which would be significantly impacted, namely polygons 4, 5 and 6. MELP required that NGR commit to developing mitigation and compensation measures for polygons 4, 5 and 6 to the satisfaction of the RM-FWH. MELP also expressed concern over what it considered a lack of detail concerning mitigation and compensation plans for habitat which would be impacted or lost due to development in the upper valley wetland/lake area and the riparian zone of Melvin Creek. To address this, MELP requested that NGR commit to developing a plan for on-site mitigation or off-site compensation to maximize residual values for these areas.

With respect to NGR's impact assessment for wildlife habitat and vegetation, MELP indicated that there were a number of conclusions presented in the report with which it disagreed, and that further resolution would be required. MELP provided various recommendations which would address these issues, the most significant of which are summarized below.

NGR was requested to provide a statement regarding the anticipated reduction in numbers of forest-dwelling wildlife resulting from resort development, and to commit to limiting any loss of mature forest, subject to agreement of the RM-FWH. Additional information regarding the location and alignment of the proposed walking trail between the upper and lower villages was also requested. MELP also requested that, if the pathway is accepted as an intrusion into the riparian buffer zone, NGR should commit to limiting the width of the pathway surface to 1 m, and the adjacent clearing to 0.5 m on either side of the path.

Regarding impacts on the alpine belt, MELP requested that NGR commit to limiting construction access to helicopter or winter road for most tower sites and upper lift terminals, rather than by means of permanent roads. MELP requested that affected areas be reclaimed to a stable condition with an appropriate species mix, and that the alteration of vegetated sites for skiway or run construction be minimized, per the EMP.

Regarding the sub-alpine belt and upper forest, MELP recommended that commitments be made that the location and width of buffer strips be subject to negotiation during the ski area master planning process, and that approval of loss of mature forest will be subject to prior agreement by the RM-FWH. Regarding this, MELP further noted that gladed runs should be considered, where appropriate.

Further information with respect to the impacts of helicopter use during construction was requested. MELP also recommended that project construction be subject to timing windows which would be approved by the RM-FWH.

MELP did not agree with the view expressed in the project report that impacts to wolverines would most likely result from increased/hunting poaching. MELP noted that ongoing management and policies would reduce the likelihood of any significant impact on wolverines in the Melvin Creek valley associated with hunting or poaching. MELP suggested that, based upon existing information, impacts on wolverines in the vicinity of the resort would be considered an effect of the project, unless shown through monitoring to be otherwise.

Proponent's Responses to Agency Comments on Project Report (6.2.3.2.1)

NGR provided further information with respect to wildlife resources in its January 18, 2000 correspondence.

NGR attempted to clarify its assessment of the wetlands in the upper valley (polygons 4, 5 and 6), and noted that, regardless of their relative value, it would agree to preserve as much of the wetlands as possible, bearing in mind that they are located in the heart of the proposed upper village development. NGR noted that the resort project would have impacts on the wetlands, but no significant threat exists to any Melvin Creek species. NGR committed to develop plans to the satisfaction of the RM-FWH to minimize impacts where possible, provided that MELP appreciated that NGR's development plan must first address resort village development, lift terminal locations, vehicle access, and pedestrian and skier interconnection. NGR, referring to MELP's concern that the base terminal of Lift 8 would be located in a highly sensitive wetland, committed to carrying out environmental sensitivity studies on the outlet areas of Second Lake and downstream riparian areas prior to any lift installation, and prior to any use of Second Lake as a supplemental water supply.

NGR provided a more in-depth discussion of the anticipated timber harvesting associated with the resort development and the resulting impacts on forest-dwelling wildlife. NGR noted that the 45% removal of timber cover in the Melvin Creek valley, described in the project report, was a worst case-scenario, and that timber removal would take place over ten years or more. Details were provided regarding the anticipated level of mature timber removal for various areas of the project development. NGR stated that the impact of timber removal for ski trails on forest wildlife is anticipated to be low. While some forest-dwelling species may be reduced, other species which prefer open habitats would likely benefit. Overall, NGR concluded that no species are expected to be lost to Melvin Creek from forest clearing, and that the impacts would be less than from full-scale logging, because more stands of mature forest will be left intact permanently. NGR committed to work with the RM-FWH to maintain areas of mature forest throughout the valley.

NGR noted that the detailed engineering and site location had not been completed for the public biking/walking trail along Melvin Creek between the two villages. NGR suggested that the surface of the trail should be 3 m wide, in order to ensure public safety. NGR noted that the projected encroachment would remove less than 25% of the timber in the riparian zone. NGR's consultants were convinced that there would be no measurable wildlife impacts from construction of a 3-m-wide trail in the riparian zone of Melvin Creek, providing that the trail is sensitively designed, with habitat principles in mind. NGR committed to have its wildlife and vegetation consultants involved in trail layout and planning.

NGR discussed MELP's request not to create permanent road access for the lift installations, commenting that safety issues and costs factors are greatly improved when road access is available. NGR explained that, without road access, all lifts would be required to be "bottom-drive", which is less-efficient, and has lower lift capacity and higher operation costs. The lack of access roads would also necessitate the use of helicopters, which could increase disturbance effects on mountain goats. NGR also

noted that the request for no lift installation roads was inconsistent with MELP's request for lowering the locations of various upper lift terminals. This would require significant blasting and soil disturbance as large (40-m) flat surfaces would need to be created on (sometimes) steep slopes. NGR confirmed that it had committed to reclaim all disturbed soils with the appropriate species mix, as soon as possible after the disturbance occurred.

NGR discussed the anticipated timing of lift construction to minimize impacts in sensitive and high-elevation areas. Most work would be concentrated in the late summer and early fall, in order to make use of drier conditions and allow for fewer disturbances in the more sensitive wildlife periods (e.g. goat kidding). NGR accepted that the RM-FWH would approve construction windows for the alpine areas, and confirmed its commitment to prohibit construction in sub-units 3, 6, 7, and 8 prior to July 15.

In order to make roadsides less attractive to wildlife, and thereby minimize potential impacts from the resort-based roads, NGR committed not to include clover or alfalfa in any seed mixture used in reclamation of disturbed roadside sites.

In order to further address the potential effects of introduced/exotic species, NGR committed to present a bylaw for animal control, as outlined in the project report, to the SLRD. NGR also recommended further restrictions on access and movement of pets and livestock in the Melvin Creek valley, and suggested that these be enforced through the environmental monitor or a by-law enforcement officer.

NGR confirmed that specific technical surveys, when required, would be conducted by qualified personnel under the supervision of the environmental monitor.

Follow-up Exchanges (6.2.3.2.1)

In its March 22, 2000 correspondence, SLRD noted that there was currently no animal control function in the regional district, and that none was planned. However, SLRD noted that, if required in the future, it would consider establishing a local service area for animal control for the resort.

In its March 1, 2000 correspondence, MELP provided a further response to NGR's proposed measures to address impacts on wildlife resources. MELP did not provide further comment on certain issues which it had raised previously, indicating that they had been resolved. However, it made note of several outstanding concerns.

MELP noted that, to date, its concerns with respect to riparian/wetland values had not been addressed and fully resolved by NGR. These concerns can be summarized as follows: (a) compensation for the wetland habitat lost in the Beaver Fen and the 1.6-ha fen; (b) the need for a commitment that all ecologically sensitive areas (e.g. Green Valley wetlands) would be signed and pathways designed to discourage incidental recreational trampling and other impacts; (c) the need for clarification of the environmental values that would be retained in the lake and flood path in the vicinity of the upper village development, and resolution of the outstanding request for agreement on the final design and joint planning of mitigation and compensation, with approval subject to approval by RM-FWH; and (d) the need for a commitment that on-site

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mitigation or, if mitigation to an acceptable level was not feasible, off-site compensation would be developed to the reasonable satisfaction of the RM-FWH for any impacts to riparian or wetland habitat values (including intrusions into the 15-m Melvin Creek riparian zone), prior to creating the disturbance.

More specifically, with respect to the anticipated impacts in polygons 4 and 5 resulting from the upper village development, MELP clarified that NGR's commitment to retain as much of those polygons as possible, was only acceptable if adjacent development could be done in a manner that retained the natural wetland characteristics. MELP also noted that encroachments into the riparian setbacks were acceptable, but only when no viable alternative existed. Consequently, for any intrusions into the riparian setback area, NGR would need to demonstrate that intrusion was unavoidable (i.e. that there were no other options), and to obtain approval from the RM-FWH prior to incorporation into the ski area master plan. MELP also noted an interest in whether it would be workable for BCAL to exclude the riparian corridor along Melvin Creek and all tributary streams from the Crown land granted to NGR.

MELP did not accept the 3-m trail widths proposed by NGR for those trails to be constructed in the riparian areas. MELP had earlier noted that a trail width of between 1 m and 2 m would be acceptable. Consequently, MELP requested that NGR commit that, for any portions of the trail which are proposed within the riparian buffer, NGR provide data to show that there is no other option but to encroach into the riparian buffer, and that the proposed width is the minimum for safe use. This rationale would need to be provided to, and approved by, the RM-FWH.

MELP noted that, if NGR were to determine that permanent road access to upper lift terminals would be constructed, there would need to be further discussion with MELP aimed at restricting summer access, in order to minimize human activity and disturbance at the ridge lines.

In its March 10, 2000 letter, DoE/CWS reiterated its concerns with respect to wetlands and riparian habitat. CWS acknowledged that NGR had, through previous commitments, addressed its concerns regarding riparian habitat. However, CWS also confirmed that, before federal review of the project could be completed, NGR needed to recognise and agree to the commitments pertaining to wetlands which CWS had previously requested on October 12, 1999. In its March 14, 2000 correspondence, NGR committed to the requirements regarding wetlands and riparian habitat which had been specified by CWS. DoE/CWS, in its March 20, 2000 correspondence, indicated that its concerns with respect to wetland and riparian habitat issues had been adequately addressed.

On March 14, 2000, NGR provided a detailed response to the March 1, 2000 MELP comments, specifically addressing each of the identified concerns. NGR provided further clarification of its position, and agreed to the commitments requested by MELP for most of the issues raised. One outstanding issue identified by NGR pertained to compensation for the areas referred to as the Beaver fen and 1.6 ha-fen. NGR requested further discussion with MELP to resolve this issue. NGR subsequently committed to provide compensation, prior to causing disturbance, for all unmitigatable

riparian and wetland impacts associated with the development footprint intruding into the 15-m riparian zone. If the project is granted an EA certificate, compensation will be negotiated with NGR for all losses sustained by the Beaver fen and 1.6-ha fen, and the riparian areas around them.

On March 16, 2000, NGR met with representatives of MELP and the EAO to further discuss NGR's March 14, 2000 correspondence as it pertained to outstanding riparian and wetland habitat issues. During the discussion, MELP clarified that the Beaver fen and 1.6 ha fen are of high value to the ecosystem. Although it recognised that the resort development, as proposed, will permanently alter or destroy the entire 1.6 ha fen, MELP, in accordance with its mandate, emphasised the need to preserve as much of these important wetland areas as possible. Based on this discussion, a mutually agreeable resolution to all of the outstanding issues was reached. In addition to the commitments previously made, NGR committed to the following in order to address MELP's concerns:

- while encroachments into the Beaver fen cannot be entirely avoided by the resort development, explore all options before encroachments into this area is authorised (**Note** - All encroachments would be based on plans which are prepared to the RM-FWH and BCAL);
- attempt to locate the walking trail outside of the 15-m riparian setback where possible (**Note** - Encroachments into riparian areas would only be based on plans which are prepared to the satisfaction of the RM-FWH);
- review every permanent upper terminal access road with BCAL and RM-FWH to seek methods to minimize public access (**Note** - All permanent roads would be gated and public vehicles (including All Terrain Vehicles (ATVs) and snowmobiles) prohibited. Mountain bike access would be created in accordance with plans which are subject to approval by the RM-FWH. All public access (including vehicle, mountain bike and foot) to the west ridge, Upper Twin Lake bowl and the south ridge would be prohibited. This situation could be amended if BCAL and the RM-FWH agree that the purpose of this wildlife prohibition was no longer necessary or required); and
- minimize alterations of soils and vegetated sites, and reclaim disturbed soils using native species, where possible, and according to reclamation plans prepared to the satisfaction of the RM-FWH.

During the March 17, 2000 project committee meeting, MELP reiterated its disagreement with the way potential impacts on wolverines were depicted in the project report. In its March 24, 2000 correspondence, NGR forwarded comments from its wildlife consultant, David Hatler, regarding potential impacts on wolverines from resort development. Hatler noted that the project report described possible impacts to individuals resulting from habitat effects, access effects (hunting/poaching and vehicle collision) and introduced species effects. Hatler reaffirmed that, in the context of all effects potentially impacting wolverines, increased hunting/poaching appears to be the most likely. Hatler further noted that a significant impact on the wolverine population was not expected.

In its April 20, 2000 correspondence, MELP provided further discussion of the wolverine issue. It noted that wolverines are blue-listed provincially, and have been designated as 'vulnerable' nationally, due to their sensitivity to human disturbance and mortality.

Wolverines tend to avoid areas of human activity, and adult females with young are particularly sensitive during the denning period in the late winter and early spring. MELP suggested that the project had a high likelihood of displacing wolverines from the Melvin Creek drainage which, based on the available documentation, has substantial habitat values, including potentially high value as a denning site. MELP also noted that the project had some potential to increase the level of human activity in a large area surrounding the project. This would be expected to result in wolverines being displaced from these areas, and a deterioration of the effectiveness of the available habitat. MELP observed that, although wolverine populations had not yet been delineated for BC, the area surrounding Melvin Creek is known to be occupied by wolverines. The conservation status of this wolverine population has not yet been determined.

In its May 10, 2000 correspondence, MELP discussed mitigation measures to address the project's potential impacts on wolverines. MELP indicated that measures recommended to manage grizzly bear impacts (access management and restrictions on the issuance of commercial recreation tenures) in areas adjacent to the proposed resort, should also mitigate development-related impacts on wolverines. Restricting access to wolverine denning sites should be achieved in part by NGR's commitment that there will be no resort-based off-site heli-skiing, heli-hiking and snowmobiling. MELP also suggested that, if the project receives an EA certificate, NGR should develop and implement a Problem Wildlife Plan which would be subject to approval by the RM-FWH. This plan should address impacts on carnivores such as wolverines, and where possible, should include methods to avoid identified wolverine denning sites. Surveying the development area for potential wolverine denning sites should be undertaken during the CASP ski area master planning process. This issue was resolved when, in subsequent discussions with EAO, NGR agreed to develop and implement a Problem Wildlife Plan.

Public Comments on Issue and Project Committee's Position (6.2.3.2.1)

1. PUBLIC COMMENT:

Impacts to bogs/wetlands in fragile alpine and sub-alpine areas have not been adequately addressed.

PROJECT COMMITTEE POSITION:

The project committee has considered these issues extensively, and is satisfied with the impact management measures proposed by NGR – see this section. Riparian impact concerns arise in the context of various different issues, and so are also discussed in numerous sections of this report – see, for example, the discussion in sections: 6.1.1.1 (*Geotechnical Hazard issues – Resort*), 6.1.1.3 (*Wildfire Design Issues*), 6.2.1.2 (*Liquid Waste Management*), 6.2.2.1 (*Water Supply*), 6.2.3.1 (*Fisheries Resources*), 6.2.3.2. (*Wildlife Resources*), 6.2.3.3 (*Birds*) and 6.3.1 (*Forest Resources*).

2. PUBLIC COMMENT:

Full-scale logging would cause greater wildlife impacts than the resort.

PROJECT COMMITTEE POSITION:

Extensive logging of the Melvin Creek drainage is planned by Ainsworth Lumber Co. Ltd., so that an 'either/or' situation is not anticipated. Moreover, NGR and Ainsworth have collaborated to ensure that logging will be compatible with preserving the resort development option – see section 6.3.1 (*Forest Resources*) for further discussion. In any case, the EA process is not a land use planning mechanism through which to make choices between alternative land use options. That is the role of planning processes such as LRMP processes or higher-level planning under the *Forest Practices Code*. The EA process is a project-specific review mechanism, intended to determine whether or not a proponent's development plans can be implemented in such a manner as to reduce any potential adverse effects to acceptable levels. Thus, the project committee is not comparing (and choosing between) the impacts of Ainsworth's overall logging plans and those of resort development, although these logging plans have been taken into account in the more generalised context of the resort project's cumulative environmental effects – see section 6.2.4. Based on the EA review of the project, the project committee is satisfied that potential adverse effects of the resort project are manageable – see, for example, discussion of wildlife effects in the various subsections of section 6.2.3.2 (*Wildlife Resources*).

The project committee notes that the trade-off suggested in the public comment is difficult to weigh, and views vary on its validity. More or less temporary resource activities such as logging, while reducing the usefulness of habitats for some wildlife species (often on a temporary basis only), may have the effect of enhancing conditions for other species. However, the construction of more or less permanent facilities for housing and infrastructure typically eliminates the usefulness of those areas for larger species of wildlife and/or sets up human/wildlife conflicts which have the potential to lead to displacement of animals from the area around the facilities. Some species may be forced onto neighbouring habitats which are less productive, or which are already occupied by competing animals. Thus, potential wildlife impacts associated with permanent facilities tend to be significant and long-term in nature. The project committee has devoted considerable attention to efforts to ensure that wildlife impacts are minimized, should the resort project proceed.

3. PUBLIC COMMENT:

Need to address potential impacts caused by the increase in human activities both on-site and off-site, resulting from resort development.

PROJECT COMMITTEE POSITION:

Potential impacts on wildlife from on-site and off-site human activities have been addressed by the project committee - see this section and sections 6.2.3.2.2 (*Mountain Goats*) and 6.2.3.2.3 (*Grizzly Bears*) for discussion.

4. PUBLIC COMMENT:

Need to address impacts of increased helicopter-based activities and other aircraft activity in adjacent areas which will result from resort development.

PROJECT COMMITTEE POSITION:

The resort will not include helicopter-based recreation activities in the package of recreation activities which it offers. It is expected that some helicopter activity will be associated with lift construction and maintenance, and with emergency evacuation of injured people. However, the project committee has considered how to minimize the adverse wildlife effects of resort-related helicopter use, and is satisfied with the measures proposed – see this section and sections 6.2.3.2.2 (*Mountain Goats*) and 6.2.3.2.3 (*Grizzly Bears*). The potential for non-resort-related helicopter-based activity in the area has been recognised in the assessment of cumulative environmental effects – see section 6.2.4.

5. PUBLIC COMMENT:

Need to address serious deficiencies in wildlife impact assessments. More background information on wildlife values and habitat and multi-year field studies are needed to understand the seasonal and cyclical variations in wildlife densities and use of habitats.

PROJECT COMMITTEE POSITION:

The project committee has determined that the information produced for the assessment of wildlife impacts is adequate for strategic-level EA decision-making purposes. If the project receives an EA certificate, further wildlife studies and monitoring would be a condition of certification – see this section and sections 6.2.3.2.2 (*Mountain Goats*) and 6.2.3.2.3 (*Grizzly Bears*).

6. PUBLIC COMMENT:

The resort will block animal migration routes and fragment wilderness habitats.

PROJECT COMMITTEE POSITION:

Potential impacts of the resort on wildlife movement corridors and wilderness habitats have been considered by the project committee. The committee is satisfied that adequate mitigation measures are proposed to address these concerns - see this section and sections 6.2.3.2.2 (*Mountain Goats*) and 6.2.3.2.3 (*Grizzly Bears*).

7. PUBLIC COMMENT:

With proper planning, incorporating appropriate public and First Nations input, impacts on mountain goats, grizzly bears and other wildlife can be successfully mitigated.

PROJECT COMMITTEE POSITION:

Potential impacts on wildlife species from project development have been considered at length by the project committee, taking account of extensive public and First Nations input. The project committee has concluded that potential wildlife impacts associated with resort development are largely manageable - see this section and sections 6.2.3.2.2 (*Mountain Goats*) and 6.2.3.2.3 (*Grizzly Bears*).

8. PUBLIC COMMENT:

The benefits of the project to the local communities outweigh any impacts to wildlife.

PROJECT COMMITTEE POSITION:

Perspectives vary on this matter. The project committee ensures that all potentially significant impacts are assessed, and does not trade off between costs in one area and benefits in another. Thus, the committee has proceeded with the project review on the basis that wildlife impact concerns need to be addressed. It is now satisfied with the proposed wildlife impact management measures. Ministers, when making their EA certification decision, will weigh any trade-offs which may be necessary between wildlife values and local community benefits.

9. PUBLIC COMMENT:

Need to address potential impacts on wildlife from the noise associated with resort operations (e.g. machines and avalanche control).

PROJECT COMMITTEE RESPONSE:

The project committee examined noise impacts on wildlife, where considered significant. For example, if the project is approved, NGR is expected to provide to MELP's satisfaction an avalanche control plan which addresses noise and other impacts on mountain goats, and to identify appropriate timing windows for certain construction activities, in part to address noise impact concerns. NGR has made other commitments which will help to address noise concerns, such as adjusting lift locations and agreeing to lift operating restrictions (such as seasonal closures) to minimize goat disturbance, and agreeing to key recreational access restrictions (e.g. restricted use of mountain bikes, snowmobiles, etc.) – see this section and section 6.2.3.2.2 (*Mountain Goats*).

10. PUBLIC COMMENT:

Project needs to be evaluated in the context of entire Cayoosh Range, because adjacent valleys will be logged shortly, and as habitat is degraded, Melvin Creek will become more important.

PROJECT COMMITTEE POSITION:

A cumulative effects assessment has been undertaken to assess the potential direct environmental effects of the project in combination with those of pertinent past, present and potential future projects in the surrounding area - see this section and section 6.2.4 (*Cumulative Environmental Effects*).

11. PUBLIC COMMENT:

Need to further consider species on the Identified Wildlife Management Strategy list (i.e. grizzly bears, wolverines).

PROJECT COMMITTEE POSITION:

NGR has committed to numerous measures to minimize impacts on grizzly bears, including preparation and implementation of a Bear Management Plan, which would also be beneficial for other species with large home ranges, such as wolverine. The

intent of this plan will be to minimize, to the greatest degree possible, the movement of people from the Melvin Creek drainage directly into surrounding drainages - see this section and section 6.2.3.2.3 (*Grizzly Bears*).

12. PUBLIC COMMENT:

Need to conduct a comprehensive wildlife assessment for the entire ecosystem and subject it to independent review.

PROJECT COMMITTEE POSITION:

Various different wildlife and vegetation species and their habitats within ecosystems in Melvin Creek and surrounding areas have been assessed as part of this EA review. However, the EA review is limited in its scope and focus to the proposed project and its potential impacts, except in the more generalised context of the resort project's cumulative environmental effects (see section 6.2.4). Thus, for example, the EA process does not require broad ecosystem studies to be generated where they are not directly required for the project assessment itself. Regarding independent review, the EA Act legislated a review process which is primarily based on proponent-generated studies which are subject to expert review by government's technical specialists. This is the approach typically adopted in all jurisdictions in Canada, and in most jurisdictions in the USA also. The project committee does have the option to commission independent third-party expert advice, if it considers that it needs arm's-length expert technical assistance in order to investigate an impact concern with confidence. The project committee, in this case, exercised that option in investigating both the project's economic feasibility and its likely impacts on mountain goats (see section 6.2.3.2.2). However, for other assessments (including other wildlife assessments), it has relied on government technical review of NGR's studies. When ministers make their EA certification decision, they do have the option to refer the project to an independent panel (the EA Board) for a public hearing, if they feel that such a forum is warranted to investigate concerns.

13. PUBLIC COMMENT:

Should not intrude into wildlife habitat to provide further areas for human recreation.

PROJECT COMMITTEE POSITION:

The EA process is expected to investigate whether or not the impact concerns associated with the resort project can be effectively managed if the resort proceeds. It is beyond the scope of the EA process to address land use planning questions about whether, in principle, this area should be considered for resort development. Normally, such questions are addressed by land use planning processes. In this case, Cabinet notified the Lillooet LRMP planning table in 1995 of its interest in having the ski resort potential of the Melvin Creek area investigated more fully. This is the land use planning context within which the EA review of this project has been conducted – see also section 6.7 (*Land Use Planning Considerations*).

First Nations Comments on Issue and Project Committee's Position (6.2.3.2.1)

A. Wildlife Impacts

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *Review of Wildlife and Habitat Assessment for St'at'imc Impact Assessment Study of the Proposed Cayoosh Resort Development*, dated March 16, 2000, and prepared by Raymond Demarchi and Carol Hartwig.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final, although St'at'imc Chiefs dispute the consultant's statement that MELP is legally responsible for wildlife in the province, since the province is deemed to have asserted jurisdiction over wildlife in St'at'imc territory without St'at'imc consent.

1. FIRST NATIONS ISSUE:

Lack of strategic process – MELP lacked a comprehensive strategic process for wildlife assessments, and failed to allocate sufficient staff and resources. MELP's Wildlife Branch should be responsible for reviewing the wildlife assessments, with involvement of the Resource Inventory Branch and Conservation Data Centre (CDC), as for other EA reviews. The EA process has focussed on impacts in Melvin Creek, and is not likely to address impacts on wilderness values, regional land use planning, wildlife systems as a whole, or the feasibility of mitigation.

PROPONENT RESPONSE:

NGR did not agree with MELP's interpretation of certain issues, but in NGR's view, MELP's review effort was diligent, concerted, and conscientious. Ecodomain notes that there is no formalised process for ensuring involvement of parties which it suggests as necessary. NGR does not necessarily disagree with Ecodomain's opinion, since it is confident in subjecting its work to any review that is objective and professional. Commenting on the last point, Table V-12 (see project report, Wildeor/LGL report, page 78) listed potential impacts at three geographic levels: (1) local (i.e., Melvin Creek); (2) the Cayoosh Range as a whole; and (3) all of MU 3-16. NGR welcomes discussion of those ratings and, indeed, has made some changes to the original list, in response to MELP concerns. It is not accurate to suggest that NGR's focus was placed on Melvin Creek in isolation. The Wildeor/LGL report did address wildlife systems as a whole, and the feasibility of mitigation. It is for government and the EA process to deal with any linkages to regional land use planning.

PROJECT COMMITTEE POSITION:

Early in the review, staff resources were identified in MELP's Kamloops (Southern Interior) regional office to provide technical input to address all aspects of concern to MELP. MELP wildlife staff from the Southern Interior Region led the review, and have involved staff from the headquarters Wildlife Branch as necessary. Under the

EA process, NGR is responsible for identifying environmental impacts, avoiding impacts where possible, and proposing mitigation and compensation to offset unavoidable impacts for consideration by MELP staff. NGR is asked to address rare and endangered species in the review, and this may involve them in contacting the CDC directly to obtain current information on species lists. It was not considered necessary for the Resource Inventory Branch to become involved in this project for the reasons mentioned below – see response to item #3.

2. FIRST NATIONS ISSUE:

Inadequate inventories – Given the significance of wildlife resources, the wildlife studies were inadequate for informed decisions. The wildlife study area was not large enough to assess biological or population impacts, especially on wide-ranging species (e.g. grizzly bears, wolverine, wolves). NGR's consultants have recommended additional studies/inventories, and DFO considers existing studies inadequate for cumulative effects assessment purposes. Invertebrates, non-rare vascular and non-vascular plants and plant associations were not inventoried. Other than mountain goats, large mammals (e.g. grizzly and black bears and mule deer) receive limited attention. Inferences about presence or abundance of some species (e.g. Spotted Bat, Harlequin Duck and Spotted Owl) are made without current Melvin Creek survey data.

PROPONENT RESPONSE:

Ecodomain does not define 'inventory', but the context suggests that the reference is intended to refer to absolute numbers of animals and/or to the degree of compliance with Resource Inventory Committee (RIC) standards. For most of the species mentioned, government management of habitats and harvests has proceeded for decades without information on absolute numbers, because reliable methodologies to establish them do not exist. RIC standards include methods for inventory at the relative abundance and presence/absence levels, recognizing that absolute abundance assessments may not be either possible or necessary for particular purposes. NGR's inventories have been sufficient to support informed decisions. The methodology used was one developed by NGR's consultant, Wildeor, specifically for impact assessments, and which RIC specifically requested Wildeor to formalise as a general biodiversity procedure. The objective is to first identify species known or suspected to be present, then to narrow the focus to those species for which there are identifiable concerns.

In regard to size of the study area, the most likely error associated with too small an area is to over-estimate potential impacts, since a relatively high frequency of use and occurrence in a small area may nevertheless be less than or proportional to that in the larger surrounding area. Wildeor usually suggests to proponents that studies be conducted over a larger area than the development site, to provide for that perspective. NGR/Wildeor do not follow the implied reasoning that a low degree of impact in a small study area would translate to a larger effect in a larger study area.

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The NGR/Wildeor comments on additional studies were mostly made in the context of mitigative 'fine-tuning' for specific facility developments, and were not an admission of inadequacy for overall assessment at the conceptual project planning level. The reference to DFO's cumulative effects concerns is too vague in the context in which it is raised for NGR to respond to it.

Regarding Spotted Bat, this species, if it occurs at all, is most likely to occur in the lower, drier portion of the valley, which will be subject to logging, whether or not there is a ski development. Spotted Bat is unlikely to occur in that area, according to data from the CDC. The concern expressed for Harlequin Ducks is out of proportion to the likelihood of significant occurrence (i.e. several breeding birds) or the potential for impact if a few individuals actually are present. NGR has committed to a specific, pre-development survey, if the project is granted an EA certificate.

PROJECT COMMITTEE POSITION:

The wildlife inventories submitted by NGR were deemed adequate by the project committee and MELP staff to complete an assessment of the potential effects of the project for strategic-level EA review purposes. If the project is granted an EA certificate, further work would be completed prior to development, consistent with NGR's commitments. This work would include detailed riparian evaluations, a one-season Spotted Owl inventory, a July/August ground survey prior to any site disturbance to inventory rare and endangered plants and fauna, and inspection to confirm the site-specific presence/absence of threatened and endangered plants at potential sites in the development area. The Grizzly Bear Assessment Report by MELP's Carnivore Specialist describes the area of grizzly bear habitat which could potentially be impacted by the project, and refers to mitigation/compensation measures which could address the impacts. The project committee has accepted MELP's recommendation that a two-fold approach to impact mitigation is warranted, entailing: (1) a comprehensive bear management plan, to be implemented by NGR; and (2) complementary measures to be implemented by government agencies (MELP, MoF and BCAL) to manage any increased recreational use of surrounding areas by resort visitors, residents and workers. Although no further study is proposed, follow-up monitoring is recommended to confirm the effectiveness of agreed-to measures. NGR has committed to employ a qualified biological consultant to conduct a Harlequin Duck survey during appropriate seasons, and prior to any logging, blasting or road construction. This survey should determine Harlequin Duck presence and abundance in the development area.

3. FIRST NATIONS ISSUE:

Independent MELP review – Key MELP groups (the Resource Inventory Branch, the Wildlife Branch, the CDC) were not asked to undertake independent review of the wildlife habitat and population studies, as for other EA reviews.

PROPOSER RESPONSE:

As noted in NGR's response to item #1, there is no established process for including these groups as reviewers for all EA Projects.

PROJECT COMMITTEE POSITION:

In the EA process, there is no practice of asking the CDC to undertake independent assessments of projects. Prior to conducting rare plant field surveys, data on rare plant occurrences in the Cayoosh Range were obtained from the CDC by NGR, and have been listed in the project report. MELP's carnivore specialist and ungulate specialists from the Wildlife Branch are involved in the review of this project. The Resource Inventory Branch's involvement in EA reviews occurs primarily when Terrestrial Ecosystem Mapping (TEM) is part of a project report and requires review. TEM was not undertaken for this project, since Terrestrial Vertebrate Biodiversity Reconnaissance Inventory Manual (TVBRIM) mapping was used. This form of mapping was used for the preliminary wildlife inventories, and was acceptable to MELP for this project.

4. FIRST NATIONS ISSUE:

Terrestrial ecosystem mapping – MELP's TEM procedures and protocol were not applied to habitat capability/suitability mapping, so as to produce a single ecological base map which can be used for many species (especially depleted or recovering species – in this case, goats, grizzly bears and wolves, and possibly also wolverine).

PROPONENT RESPONSE:

NGR's consultant Wildeor agrees that it would be useful for MELP to produce TEM for the entire province. However, Wildeor disagrees that TEM is necessary for reliable impact assessment of projects in the EA process. TEM has no inherent or empirical predictive value for any species. One can map the landscape in great detail, and TEM almost requires that (at great cost), but the species ratings which are then applied are still subjective, and are based, for most species, on inadequate knowledge of how they actually integrate the various "patches" that constitute their environment. The TEM approach has been in use for several years now, but there is no evidence of it becoming mainstream technology in North American biological practice. Other jurisdictions in North America seem to be conducting what they consider to be acceptable impact assessments without TEM. In BC, TEM is not required for forestry, which is responsible for most of the habitat alteration in BC. TEM, and the assorted RIC inventory standards, should be offered as resources to biological practitioners, not imposed as mandatory. Wildeor disagrees that methods which vary from RIC standards are sub-standard, or that methods should be judged more on their degree of compliance with RIC standards than on their suitability for the task at hand.

PROJECT COMMITTEE POSITION:

NGR was not required to produce TEM for the project report. Adequate mapped information was provided to MELP staff in order to complete an assessment of the project in appropriate detail for EA-level review purposes. Footprint areas of the project will be inventoried for the presence of red-listed and blue-listed species as part of the post-EA CASP process, if the project is granted an EA certificate.

5. FIRST NATIONS ISSUE:

Black Bear, Cougar, Lynx and Wolverine – Melvin Creek could become a 'sink habitat' for these species, which were inventoried only incidentally, and need further investigation.

PROPOSER RESPONSE:

Conservation Officers currently destroy over 1000 black bears annually in BC, mostly in or near urban centers. Concern for significant impacts on this species is misplaced – the primary issue is the potential for conflict at the resort. NGR's proposed bear management plan will be designed to both mitigate and deal with that problem. For the other species mentioned, occurrence in the Melvin Creek drainage is sporadic and not demonstrably critical, even at the individual animal level. Further investigation would not change or further illuminate that situation. Others have previously expressed concern that the proposed resort would displace carnivores from the project area. In contrast, Ecodomain's sink concept suggests a belief that the animals will not be displaced, will not even avoid the resort area, and will be vulnerable to mortality factors when/if they arrive. Given the natural wariness of these species, and planned mitigation against factors that could lead to attraction of bears and other carnivores to the resort (e.g. proper refuse and pet management), the sink scenario for these species is difficult to envisage.

PROJECT COMMITTEE POSITION:

In the professional opinion of MELP wildlife staff, the main species of concern with respect to a 'sink habitat' is the black bear. There may be increased mortality and decreased reproductivity of black bears resulting from the development. However, a Bear Management Plan, which includes appropriate mitigation measures, should address this issue.

6. FIRST NATIONS ISSUE:

Mule deer – Mule deer impacts were not assessed in any depth, although Melvin Creek is important for mule deer habitat. Investigation is needed of: resort impacts on mule deer habitat; effects of a 'no hunting' zone on habituating mule deer to people presence; and how the enhanced/habituated mule deer population is to be managed. The consultants recommend a mule deer impact assessment and a literature review of the effects of vegetation changes on mule deer numbers and habituation to human presence. TEM of mule deer habitat capability/suitability should be undertaken, based on a study area defined by MELP's provincial ungulate specialist. Also recommended is a GPS radiotelemetry study of mule deer in Melvin Creek, based on a study area defined by MELP's provincial ungulate specialist.

PROPOSER RESPONSE:

The NGR/Wildeor studies confirmed that the Melvin Creek drainage is used by a number of deer during low-snow and snow-free periods, but that it is not winter range and is therefore not highly important as deer habitat. Ecodomain appears to concur with NGR's position that the presence of the resort is as likely to enhance the situation for local deer as to impact it, although the need for a ready management plan to deal with an

enhanced/habituated deer population is not a clearly identifiable priority. It is likely that a management plan can be devised in consultation with MELP, should the need arise. The suggested GPS studies are not necessary for impact assessment at the EA certification level, and it is not clear that they would have great value, or that only MELP specialists are qualified to design such studies.

PROJECT COMMITTEE POSITION:

In the professional opinion of MELP's wildlife staff, the project report presented a reasonable discussion of mule deer issues. MELP does not require further mule deer studies (e.g. using TEM or GPS radiotelemetry). Mule deer could potentially be positively affected by increased food sources and/or negatively impacted by the proposed project because of encounters with people and dogs. Increased mule deer mortality as a result of the development is not anticipated. Overall, the anticipated impacts on mule deer, as a result of the development, will not be significant. If a problem wildlife issue emerges, because deer are attracted to the resort, the issue can be managed through a Problem Wildlife Plan.

7. FIRST NATIONS ISSUE:

Problem wildlife management – NGR recognises that certain species could become a nuisance. At the same time, NGR wants to encourage some species as a tourist attraction. Managing for conditioned or habituated wildlife requires strict enforcement of regulations governing human access and behaviour, and needs considerable management resources. NGR's proposal is to develop management plans for problem wildlife (black and grizzly bears, mule deer, rodents, birds, etc.), once the resort is underway. MELP should develop, approve and enforce such plans.

PROPONENT RESPONSE:

From the outset, NGR has agreed that MELP should and would be involved in the development and administration of local management plans and monitoring. However, except for its ultimate responsibility for enforcement, MELP's appropriate role is more that of partner – expertise other than MELP's is also available.

PROJECT COMMITTEE POSITION:

The proper management of problem wildlife is an important issue. It will be NGR's responsibility to develop a Problem Wildlife Plan, and to implement that plan, once it is approved by the RM-FWH. Enforcement of the Problem Wildlife Plan could be achieved through SLRD by-laws.

8. FIRST NATIONS ISSUE:

Impacts beyond Melvin Creek – Ecosign indicated in a 1999 report that the area could support up to 27,900 skiers per day, although the current EA application is for 12,000 skiers per day. The expansion potential has not been assessed during the EA review, including MELP's wildlife assessments. The wildlife study area should have been larger, especially if expansion plans are possible. Adventure tourism

opportunities associated with the resort are not being addressed in the EA process in general, or in the wildlife studies in particular.

PROPOSER RESPONSE:

Conclusions about wildlife impacts from the proposed resort are intended to be applicable to the existing proposal, and not to modifications. Expansions to other areas would require additional studies in and around those areas.

PROJECT COMMITTEE POSITION:

The EA Act legislates that the review process will focus on the project as proposed by the proponent. It is not the task of project committees to speculate on possible future modifications or expansions of projects under review. Section 2.1.8 of this report lists the procedural options available to government to consider future proposals to modify a certified project, once development is underway. Having said that, it is true that it would be difficult to accommodate 27,900 skiers per day at the proposed resort location, even if technically, that much skiable terrain could be identified. It is unlikely that proposals for resort expansion on anything like that scale in the future would be approvable, given the priority which needs to be placed minimising off-site environmental effects if the resort proceeds in its current form (e.g. to protect grizzly bear values). Much of the focus of the EA review has been placed on measures to contain this resort within the Melvin Creek drainage, because of significant concern over impacts on surrounding drainages. If ministers wish to grant an EA certificate to this project, the project committee will be recommending that approval be on the basis that the resort NOT sponsor any recreational activities such as adventure tourism outside the drainage (e.g. helicopter recreation). In addition to the role of the EA process in establishing appropriate location, design and operating constraints on the resort, the project committee recognises that there is also a role for land use planning processes (e.g. through the Lillooet LRMP) and resource management agencies in ensuring that non-resort-related backcountry recreation activities in surrounding areas are effectively managed – see, for example, the discussion of grizzly bear impacts in section 6.2.3.2.3.

9. FIRST NATIONS ISSUE:

Helicopter skiing – would cause new wildlife impacts. Helicopter recreation should be prohibited in the Cayoosh Range. Even though NGR commits that helicopter-based tourism will not be incorporated into the resort's operational plan, there could be pressure from others to base helicopter operations at the resort.

PROPOSER RESPONSE:

NGR's resort proposal does not include helicopter recreation, and a prohibition of those activities in the Cayoosh Range would not impact resort plans.

PROJECT COMMITTEE POSITION:

The EA review is limited in scope to the proposed project and its potential impacts (see response to item #8). The resort will not include helicopter-based recreation activities (neither heli-skiing nor heli-hiking). The EA review does not have the mandate to assess impacts from non-project-related helicopter-based recreation,

except in the more generalised context of the resort project's cumulative environmental effects (see section 6.2.4). MELP has identified the potential impacts of non-resort-related helicopter-based recreation on key wildlife species (e.g. mountain goat, grizzly bear) in discussions with appropriate regulatory agencies, notably BCAL. BCAL's position is that any applications for heli-skiing which have the potential to impact on critical mountain goat or grizzly bear habitat would require environmental impact assessments, including addressing cumulative impacts. MELP would be one of the key reviewing agencies.

10. FIRST NATIONS ISSUE:

Highway #99 – There is no wildlife impact assessment for the increased traffic. Traffic on Highway #99 will increase at least ten times from the current 1,000 vehicles per day to 10,000 per day as a direct result of the resort. Wildlife impacts could be significant, and should be studied. Highways cause habitat fragmentation for wide-ranging species such as grizzly bears and wolverine. The consultants recommend a Highway #99 wildlife impact assessment, based on year-round traffic flows as they relate to seasonal wildlife movements.

PROPONENT RESPONSE:

Wildlife collision mortality was discussed on page 64 of the Wildeor study, included in NGR's project report. Table V-12 (page 78) identified and rated potential collision mortality impacts for all listed species and groups, but primarily in reference to the new access road. A resort-caused increase in Highway #99 traffic was not specifically considered in the project report. NGR studies did not focus on the issue because neither NGR (nor apparently MELP) considered it significant. Collision mortality of wildlife could increase somewhat with resort development.

The incidence of collisions is most likely to be significant when a highway supports high-volume and high-speed traffic, and either passes through an area of animal concentration (e.g. an ungulate winter range), or crosses an important and regularly-used animal movement corridor, or exposes a particularly sensitive or vulnerable species. Most of the incremental growth in future Highway #99 traffic attributable to the resort would occur in winter. The basis for Ecodomain's citing of a 10-fold increase in traffic and other calculations is unclear (80,000 vehicles at 10,000 vehicles per day accounts for only 8 days). The actual projected increase for winter (Nov 1 – April 30) at Year 10 is indeed 80,000 vehicles which, when added to current winter volumes of 37,800 to 42,000, amounts to an increase of ca. 200%. However, that total, expressed on a per day basis (840-870 vehicles daily over the 140 day season), constitutes less than the current summer volume of 1000 vehicles per day. The only source of wildlife kill data for the area (MoTH's Wildlife Accident Report System, or WARS), lists no winter wildlife kills on Highway #99 – clearly, this cannot be correct. The projected resort-caused 22% traffic increase during the summer season (to 158,500 vehicles) is considerably less than that for winter. That total figure is itself less than 20% of the volume recorded in both Yellowstone National Park (1992-97 mean = 995,513, from YNP Web Page) and Banff National Park (1997-99

mean = 1,027,765, data from Parks Canada). Summer WARS records for Highway #99 indicate a total of 10 kills, all deer (5 each in 1994 and 1995).

Overall, existing data do not suggest the occurrence of significant animal concentrations or crossing locations along Highway #99. Wolves, wolverines, and grizzly bears are cited as sensitive species by some. Wolves and wolverines might be vulnerable if there were concentrations of prey species and/or regular availability of carrion (road kills) along Highway #99, but that is not currently the case, and there is no basis for predicting a change in that regard. The main ungulate wintering areas along the Highway #99 corridor are found on various steep slopes north of the highway, and there is no reason for either ungulates (or their predators and scavengers) to cross the highway to access the heavily logged and generally snowbound slopes to the south in that season. The winter increase in traffic obviously has no implications for bears, which are denned at that time. The small resort-related summer traffic increase seems little cause for concern, particularly since much of it will probably not occur in the nocturnal and crepuscular times, when carnivores are most active. Furthermore, given that there will almost certainly be significant periods of low or no traffic after dark, an increased fragmentation effect beyond that already present is unlikely.

The relationship between traffic volume and wildlife collision mortality is not a purely mathematical one, in part because several other factors are involved (e.g. varying weather and visibility conditions, vehicle speed, road width, driver experience and awareness), and in part because animals are inclined, and often able, to take evasive action.

In summary, the Highway #99 corridor does not pass through any known seasonal wildlife concentration areas, and there is currently no evidence of regular crossing or chronic kill locations. Further, projected traffic volumes will not be excessively high in comparison to many other highways in areas with higher wildlife use. At the same time, current kill data are deficient and, should the project be approved, an upgrade of the reporting system is desirable to provide the basis for establishing pre-development (baseline) conditions and facilitating ongoing monitoring and appropriate adaptive management responses.

PROJECT COMMITTEE POSITION:

MoTH has advised the project committee that Highway #99 traffic will not increase by a factor of 10, as suggested in the Ecodomain report. The origin of the misimpression is unclear. Based on recent forecasts generated by MoTH for the Highway #99 Corridor Plan, regional traffic volumes are estimated to essentially double over a 25-year horizon, as a result of the general regional growth of traffic, of which resort traffic would be only one component (see chart below).

Traffic Forecasts Completed For The Highway 99 Corridor Management Plan

Location	Year	Volume (Ave. Annual Daily Traffic)
<i>Whistler to Pemberton</i>	<i>1998</i>	<i>3500</i>
	<i>2010</i>	<i>4600</i>
	<i>2025</i>	<i>6800</i>
<i>Pemberton to Melvin Creek/Cayoosh resort</i>	<i>1998</i>	<i>500</i>
	<i>2010</i>	<i>600</i>
	<i>2025</i>	<i>900</i>
<i>Melvin Creek/Cayoosh resort to Lillooet</i>	<i>1998</i>	<i>500</i>
	<i>2010</i>	<i>700</i>
	<i>2025</i>	<i>1100</i>
<i>Lillooet to Highway #97</i>	<i>1998</i>	<i>600</i>
	<i>2010</i>	<i>800</i>
	<i>2025</i>	<i>1200</i>

These forecasted volumes include the effects of the proposed resort, as well as other factors in regional traffic growth. According to MoTH records, 20 wildlife vehicle collisions (2 black bear and 18 deer) occurred on Highway #99 between Mount Currie and Lillooet from 1991 to 1999. Although these numbers are only approximate, they are relatively low, which would indicate that there is not likely a significant wildlife/vehicle conflict. The steep terrain and location of feeding/grazing areas relative to Highway #99 support the notion that the significance of impacts on wildlife from highway traffic will not increase over time. MELP has indicated that it would work with MoTH to address and mitigate any future identified impacts on wildlife from increased use of Highway #99.

11. FIRST NATIONS ISSUE:

Pre- vs. post-approval wildlife inventories – Adequate wildlife inventories should be required by the EA process before the project is approved, and not conducted at NGR's discretion or conducted as post-approval monitoring projects. Deferring such studies means an inadequate baseline (from preliminary surveys) to monitor development-related changes at the subpopulation and population levels. If problems are identified, it is nonetheless difficult to arrange for the removal of project components which are causing problems.

PROPONENT RESPONSE:

The inventory deferrals are for post-approval (but not post-development) surveys, so that they will still be baseline surveys. Deferred surveys are intended for final pre-construction planning at specific facility sites and/or for species which, if present, will occur as individuals, not at the population or sub-populations levels.

PROJECT COMMITTEE POSITION:

As indicated in the response to item #2, the project committee is satisfied that the wildlife inventories completed to date by NGR, plus additional studies committed to by NGR, are adequate to complete an assessment of the potential effects of the project for strategic-level EA review purposes. Further inventories, where warranted to achieve an adequate baseline, will be completed after the EA certification

decision, if the project is granted an EA certificate, and prior to disturbance at the site where there is enough time available. A pre- and post-baseline inventory may not be needed for all species, particularly if closely related species are undergoing study.

12. FIRST NATIONS ISSUE:

Wetland and riparian habitat – Lack of a detailed village plan has hampered wetland and riparian assessments. There is no evidence of studies of the possibly unique plant associations or invertebrates within the wetland zones which are proposed for development. Despite probable wetland impacts, NGR's consultants evaluate the proposed reserved fens as 'no impact' areas, and do not add their hectares to the total of wetlands lost. A risk analysis should be undertaken, based on 1:5,000 TEM mapping, which considers the magnitude and likelihood of potential wetland and riparian impacts, and to calculate the area of wetlands which will be lost.

PROPONENT RESPONSE:

The areas in question are wet areas at high elevation. While deserving of special consideration because of their relative local contribution to biodiversity, they are not particularly productive. NGR's assessment did give them special consideration, and did look for unique features of both vegetation and vertebrate occurrence. Ecodomain is correct that there was no assessment of invertebrate occurrence - such assessments are not commonly undertaken in studies such as this.

PROJECT COMMITTEE POSITION:

A detailed footprint of the development was not provided in the EA review, but will be provided as part of the CASP ski area master planning process, if the project is granted an EA certificate. NGR has agreed to preserve as much of the wetlands as possible, recognising that they are located in the heart of the proposed Upper Village development. In the absence of site-specific development information, MELP has opted for a conservative approach to environmental protection by requesting a range of mitigation measures, which include: restricting access to fens and wetlands and other ecologically sensitive areas, wherever possible; providing full protection for the Green Valley wetlands; providing a detailed wetland protection plan; and maintaining wetlands and stream setbacks.

13. FIRST NATIONS ISSUE:

Comparing resort developments in National Parks – The resort should be examined in light of the setting outside a protected area, where it is more difficult to control people's activities and access. It will be more difficult to control out-of-bounds skiing, biking and horseback riding. The experience at other ski resorts (e.g. in the Purcell Mountains of southeastern BC and elsewhere in the Rocky Mountains (e.g. in BC, Alberta and Colorado) should be examined.

PROPONENT RESPONSE:

Given the topography around Melvin Creek, 'out-of-bounds' activity will be more difficult to undertake than to control, not achievable on bikes and horses, and not easy on foot. The notion of 'greatly modified' populations around ski resorts is not entirely consistent with the specific information

compiled for NGR by Day and Odd (see Day, D., and N. Odd. 2000. "An Overview of Ski Area Experience with Mountain Goat, Grizzly Bear, and Other High-profile Species in the Rocky Mountain National Parks and Environs". Unpubl. Rep. for NGR Resort Consultants Ltd., Iris Environmental Systems, Banff, AB. 78pp.).

PROJECT COMMITTEE POSITION:

Although the EA review is limited in scope to the proposed project and its potential impacts (see response to item #8), and does not undertake broad-based investigations of the type suggested here, where readily available, experience elsewhere is factored into assessments, and this has occurred in this case. The project committee generally concurs with NGR's response – see above - and is satisfied that measures committed to by NGR will adequately address the issue. It is expected that resort visitors would largely remain in the valley, and in the vicinity of the base development. A small number of winter visitors or employees may ski out-of-bounds into adjacent backcountry areas, but this problem would be limited, due to the steep and dangerous access into most of the adjacent valleys, and a range of other measures to be implemented by NGR to discourage this. NGR has committed to address the issue of all-season activities outside the boundaries of the development and to implement means to minimize public access from within the resort itself to areas outside the Melvin Creek drainage.

14. FIRST NATIONS ISSUE:

Comparing logging and resort development – The St'at'imc consultants disagree with NGR's cumulative effects assessment, which discounts most road and infrastructure impacts because of proposed logging in Melvin Creek. Logging is not a permanent alienation of the land base, and may actually enhance certain wildlife habitats.

PROPONENT RESPONSE:

Some changes resulting from logging (e.g., loss of soil) may extend over such a long time frame that the boundary between 'temporary' logging impacts and 'permanent' resort impacts becomes indistinct. As with logging, some aspects of resort development can be expected to 'enhance certain wildlife habitats'. The selective use of ski runs by foraging grizzly bears in the Lake Louise area was documented in Day and Odd (2000). Use of those habitats by black bears, deer, grouse, marmots, and other wildlife is common in other ski areas in BC. The permanent alienation of land as a result of resort development may be offset by the capability to control access and to assist enforcement (i.e. it may have less overall impact than logging with unrestricted use of access roads).

PROJECT COMMITTEE POSITION:

The project committee agrees that differences exist in the extent and duration of impacts due to logging and the resort development, and has recognised this distinction in proposed studies and mitigation. More or less temporary resource activities such as logging, while reducing the usefulness of habitats for some wildlife species (often on a temporary basis only), may have the effect of enhancing conditions for other species. However, the construction of more or less permanent

facilities for housing and infrastructure typically eliminates the usefulness of those areas for larger species of wildlife and/or sets up human/wildlife conflicts which have the potential to lead to displacement of animals from the area around the facilities. Some species may be forced onto neighbouring habitats which are less productive, or which are already occupied by competing animals. Thus, wildlife impacts associated with permanent facilities tend to be significant and long-term in nature. The project committee has devoted considerable attention in its review to efforts to minimize wildlife impacts, should the resort project proceed.

15. FIRST NATIONS ISSUE:

Risk analysis – A risk analysis should be conducted for all wildlife and vegetation impacts for all aspects of resort development, and it should consider both the magnitude and likelihood of potential impacts. Best-case, worst-case and moderate-case scenarios should be modelled over a sufficiently large land base to address population effects.

PROPONENT RESPONSE:

NGR/Wildeor would need more specifics on how and where the NGR/Wildeor assessment would be improved by risk analysis in order to comment on this proposal.

PROJECT COMMITTEE POSITION:

The project report provided a qualitative discussion of the cumulative effects of the project, and identified the lack of available empirical data. Much of the assessment relied on the professional experience and judgement of the consultants. To conduct a risk analysis, as proposed above, more empirical data would be required than is feasible or likely warranted. Where appropriate, risk and uncertainty were considered in the assessment process. In order to respond in more depth to this concern, further clarification from St'at'imc's consultant is needed with respect to what is meant by a risk analysis, as well as an understanding of how a risk analysis would provide information or address questions that have not already been addressed during the EA review of the project.

16. FIRST NATIONS ISSUE:

Undertake TEM mapping of grizzly bear, black bear, wolverine, wolf and cougar habitat capability/suitability, based on a study area defined by MELP's provincial grizzly bear and carnivore specialists.

PROPONENT RESPONSE:

TEM would not add materially to the assessment already done.

PROJECT COMMITTEE POSITION:

Undertaking TEM, in addition to the biophysical mapping which NGR has already provided or committed to providing, was not deemed necessary for strategic-level EA review purposes. MELP recommends the application of an adaptive management approach, consisting of both monitoring and an effective feedback mechanism, to guide the implementation of mitigation measures and reduce impacts on the listed species.

B. Impacts on Traditional Use of Wildlife by First Nations (Compton Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort – Cultural Heritage Study – Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key Points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. The report contained only limited ethnozoological information, and none of the documentation reviewed by the St'at'imc consultant contains site-specific information about St'at'imc occupation or use of the Melvin Creek area. Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area. These include:

- 2 amphibian species (spotted frog, western toad);
- 2 reptile species (common garter snake, western garter snake); and
- at least 27 types of mammals (black bear, grizzly bear, beaver, bobcat, yellow pine chipmunk, coyote, mule deer, fisher, mountain goat, snowshoe hare, lynx, marmots (various species), marten, mice (various species), mink, moose, river otter, common pika, porcupine, northern flying squirrel, red squirrel, striped skink, long-tailed weasel, short-tailed weasel (ermine), gray wolf, wolverine, bushy-tailed woodrat).

Compton reports that the June 1999 Wildeor/LGL report listed no red-listed wildlife species as potentially present in the study area. Only the wolverine and grizzly bear are blue-listed, and both are known to occur in the study area, with other species (e.g. fisher) being potentially present.

The report provides only limited information to explain in what way these species are ethnobiologically significant, noting that many of them have St'at'imc names. One reference cited by Compton refers to wolverine being hunted for their skins. Sources also indicate that mule deer, black bear, wolf, coyote, lynx, marten, short-tailed weasel, mink and snowshoe hare were hunted for their flesh, skins and other body parts. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area, including some less economically valuable, yet culturally significant, invertebrate, amphibian, reptile and mammal species.

1. FIRST NATIONS ISSUE:

[**Note** - The Compton report did not specifically raise wildlife impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

The June 1999 Wildeor/LGL report did indicate that one red-listed species, Spotted Owl, had been sighted in the Cayoosh Creek drainage and the Downton valley, noting that the occasional appearance of individuals, especially dispersing juveniles, was a possibility. More generally, the project committee is satisfied that NGR has provided an adequate wildlife impact assessment for EA review purposes, and that none of the species listed by Compton are at risk of serious impact. Impacts on identified species in the development area should be reduced through implementation of an extensive range of mitigation and compensation measures by NGR, coupled with an adaptive management approach where monitoring and an effective feedback mechanism would allow ongoing refinement of these measures. See this section, section 10 (*Mountain Goats*) and section 11 (*Grizzly Bears*) for responses to comments on potential wildlife impacts.

C. Impacts on Traditional Use of Wildlife by First Nations (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

Points on wildlife other than goats and grizzly bears in the report included the following:

- Black bears were hunted for meat (although this was not a popular meat) and hide (for blankets, rugs and clothing).
 - Deer were hunted in summer time at their salt licks and regular drinking and swimming places. The meat was eaten fresh or smoked, and the hides were used for clothing and moccasins.
1. FIRST NATIONS ISSUE:
[**Note** - The Kennedy/Bouchard report did not specifically raise wildlife impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

See above for committee's response to wildlife points raised in Compton study.

Proponent's Commitments Relevant to Issue (6.2.3.2.1)

In order to further address general wildlife resources issues, NGR has committed to:

Wildlife Habitat/Vegetation

- implement a development strategy that maintains the biodiversity of the resort area, particularly in and around the rarer local habitats;
- minimize losses of plants and animals by taking a conservative approach in all works;

- for all development where site location and boundary options exist, involve the services of professional biologists in the final site selection decisions in the field, to ensure that the most favourable options for wildlife and rare plants or communities are known and considered;
- incorporate any outstanding wildlife habitat mitigation plans into the EMP/ESC;
- implement a monitored soil disturbance control program throughout construction, with all disturbed areas being replanted as quickly as possible, to minimize erosion arising from these works;
- use indigenous plants to revegetate disturbed areas, wherever possible (**Note** - Sites are to be reclaimed, as soon as possible following disturbance, to a stable condition with an appropriate species mix. All reclamation plans are to be developed and implemented to the satisfaction of the environmental monitor);
- consult a soil scientist to review existing information, conduct a field survey, and contribute to trail and road facility plans, in order to ensure that facilities are located on stable soils and well-drained areas;
- undertake appropriate planning of ski-slope locations, to minimize any destruction of natural vegetation from snow compaction (i.e. on seeps, fens and bogs);
- develop a Master Trail Plan which identifies the location, type and timing of use of all non-ski trails in the project (**Note** - The Master Trail Plan is to:
 - involve wildlife and vegetation consultants in trail layout and planning;
 - restrict access, where possible, to any areas designated as supporting rare plants or other special features;
 - adhere to riparian zone protection commitments; and
 - be prepared and provided to the satisfaction of the RM-FWH).

Alpine Belt

- alter alpine habitat as little as possible;
- avoid seeps and fens, when possible;
- minimize soil removal and disturbance;
- select sites for construction with little or no vegetation, if possible;
- select bare (unvegetated) sites for temporary structures and staging areas for soil or rock, wherever possible;
- for reclamation plans, appropriately consider studies such as those done in BC for mine reclamation in alpine environments by the BC Technical and Research Committee on Reclamation;
- to minimize erosion, undertake slope grading after spring freshet, and utilise erosion control fencing and settling ponds, where necessary;
- use helicopters for moving lift towers, to limit road access, wherever possible;
- revegetate all disturbed areas (including sites impacted by trenching for snowmaking equipment, powerlines and service road construction disturbances);
- locate mountain service roads in locations where drainage is minimally impacted;
- provide plans for roads which will be constructed to the upper lift terminals to the satisfaction of BCAL and MELP RM-FWH (**Note** - Public vehicles (including motorcycles, ATVs and snowmobiles) will be prohibited from using these roads and permanent roads are to be gated and signed. Mountain bikes will be restricted to areas and timing approved by the RM-FWH. These restrictions will be included in the BCAL master development agreement).

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Sub-alpine Belt and Upper Forest

- wherever possible, retain small patches and strips of mature forest in and around developments;
- minimize the removal and/or enhance the supply of coarse woody debris (i.e. stumps, logs) in residual forest areas, at the direction of the environmental monitor, and in keeping with the advice of the Fire Marshall, in the latter case, to ensure that fuel loads are reduced to a moderate rating;
- minimize the size of soil staging areas, and ensure that soil collected during excavation is placed in an area of future development, and not in areas which would not otherwise be disturbed;
- minimize the disturbance and alteration of areas adjacent to construction sites;
- wherever possible avoid fens and seeps; and
- revegetate disturbed sites with natives species immediately after construction ceases.

Areas of High Concern

- provide full protection for the Green Valley wetlands;
- restrict unnecessary access and preserve intact polygons 1, 2 and 3; and
- restrict public use of these areas through appropriate signage and pathway design to minimize recreational impacts.

Areas of Medium Concern

- review existing plans for the Upper Village beaver pond area (polygons 4 and 5), refining them to maintain wetland/riparian values as much as practicable, and present these plans during the CASP ski area master planning process to the satisfaction of BCAL and RM-FWH;
- minimize earth movement in polygons 7 and 8 in the wetland areas, to avoid siltation and erosion;
- maintain polygons 9 and 30 in their natural states; and
- restrict unnecessary access (including skiways or trails) to polygon 10.

Areas of Low Concern

- where possible, maintain vegetation leave areas and riparian setbacks (15 to 30 meters) from development in accordance with the *Land Development Guidelines for the Protection of Aquatic Habitat* and subject to ski area master plan approval by the appropriate authorities;
- undertake pre-construction surveys to avoid areas of relatively higher value; and
- reclaim disturbed soils and minimize alterations of soil and vegetation sites for skiways or run construction.

Riparian Vegetation

- minimize the amount of habitat alteration and/or encroachment during the resort's development in the Upper and Lower Villages;
- undertake a site-specific detailed evaluation of riparian areas (including wetlands) in the project area (**Note** - The assessment will identify all riparian areas which will be impacted by the project footprint, and will provide design plans to protect and

mitigate riparian impacts, where possible. This riparian assessment and planning is to be prepared and provided to the satisfaction of the RM-FWH and BCAL, during the CASP process, and prior to any development occurring);

- maintain wetlands and stream setbacks (riparian buffers) to a minimum of 15 and 30 m, as provided in the DFO *Land Development Guidelines for the Protection of Aquatic Habitat* (**Note** - Construction is to be restricted in these buffers, except where stream crossings, base lift terminals, and main village sites are proposed, all of which require preparation and submission of plans to the satisfaction of the RM-FWH);
- incorporate the riparian components of the Master Trail Plan as part of the CASP process (**Note** - If encroachments into the riparian zone are required for any portions of the trail, data are to be prepared and provided to the satisfaction of the RM-FWH and BCAL which show that (i) there is no other option but to work within the riparian buffer, and (ii) that the proposed width of the trail is the minimum needed for safe public use);
- use reasonable efforts to minimize impacts to maintain, where possible, riparian values in the beaver fen during resort development;
- provide compensation to the satisfaction of the RM-FWH for all unmitigatable riparian and wetland impacts resulting from the development footprint intruding into the 15-m riparian zone, prior to creating the disturbance;
- avoid using salt, and only use very limited sand applications, on the walking trail;
- agree not to apply for Crown Land grants in the riparian corridor, unless approval is granted by the RM-FWH and BCAL;
- propose that a lake be constructed in a major portion of the easterly side of the wetland area, with a green belt park established around the lake (**Note** - The lake will provide a scenic arrival point for the Upper Village, will be designed to function as a settlement pond for the upper valley drainage systems, and will maintain remaining related riparian values. Plans are to be subject to a detailed hydrology review, and are to be prepared and provided during the CASP process, to the satisfaction of BCAL and MELP);
- preserve bogs, fens and seeps in their intact natural state, wherever possible;
- restrict access to fens and wetlands and other ecologically sensitive areas, wherever possible, to minimize habitat alteration due to trampling, littering and introduction of exotic species;
- conduct environmental sensitivity studies on the outlet areas of Second Lake and downstream riparian areas prior to any lift installation, and prior to any use of Second Lake as a supplemental water supply;
- if possible, reconstruct small wetland habitats in and around the Upper Village, or as part of the shorelines of planned ponds, subject to a detailed hydrology review;
- during construction of the dam on Melvin Creek, preserve the natural stream channel and adjacent moist habitats to the extent possible;
- prohibit the use of golfcarts, snowmobiles and ATVs on the walking trail between the Upper and Lower Villages; this is to be part of BCAL land use agreement;
- preserve the natural stream channel and adjacent moist habitats to the extent possible during dam construction on Melvin Lake;

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- along Melvin Creek, where a choice exists between narrowing the road corridor and altering riparian habitat, choose the former, wherever human safety considerations permit (avalanche concerns must be recognised);
- as part of the ski area master plan (CASP), provide a detailed wetland protection plan acceptable to MELP and CWS, with particular emphasis given to polygons 1, 2 and 3, establishing ways to limit human access (including buffers) and minimizing human disturbance in all of the retained wetlands; and
- accept that a condition of the wetland protection plan will be the requirement for a proponent-funded monitoring program, which may include bioinventories by a qualified biologist, with regular reporting directly to MELP and CWS (**Note** - Monitoring results will be used to influence the implementation of mitigation measures).

Other General Wildlife Commitments

The proponent has committed to incorporate any outstanding species-specific mitigation plans into the EMP/ESC if the project is given project approval. Commitments for wildlife mitigation include the following:

Disturbance Effects

- to the extent possible, minimize visual (i.e. vehicles, dust) and noise (i.e. blasting, earth moving, heavy equipment, helicopters, chain saws and pounding) disturbances to avoid disrupting wildlife biological schedules through the use of appropriate biological timing windows of species in the vicinity of the area (**Note** - Species-specific timing and locations will be determined by an appropriately qualified biologist, and proposals are to be prepared and provided to the satisfaction of the RM-FWH);
- restrict hiking trail access above 1,975 m, or in areas known to support intense wildlife use;
- restrict public access to certain areas at specific times of the day or year to the fullest extent of the legal enforcement options available to the proponent;
- provide public education programs (i.e. brochures) on wildlife viewing etiquette;
- not permit public vehicles to use roads to the upper terminals (**Note** - Public vehicles include motorcycles, ATVs and snowmobiles);
- prohibit the public use of snowmobiles, ATVs and motorcycles in the project area;
- make reasonable efforts to discourage out-of-bounds skiers/snowboarders from reaching areas outside the Melvin Creek drainage (**Note** - This will be managed through signage mainly, and fencing, where required);
- exclude heli-skiing and heli-hiking from being components of the resort development; and
- restrict the only summer sightseeing to lift 4 (**Note** - Summer use near the upper lift 4 terminal will be limited to sightseeing and late-spring skiing on lift 9, per NGR's March 20, 2000 Visitor Profile).

Mobility Effects

- retain the integrity of animal trails, wherever possible during construction, through avoidance and ensuring that they are not obstructed by construction debris or unnecessary structures;

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- restrict access to known wildlife areas during seasons of primary animal use;
- locate ski lifts in areas of least wildlife movement; and
- install under-road crossing structures (culverts or small bridges), where circumstances warrant (i.e. rare species, or concentrated records of road kill).

Access Effects

- agree to the establishment by MELP of a no-hunting area in the Melvin Creek valley;
- erect and maintain a gate across the road in the lower valley of Cayoosh Creek, to be kept locked whenever the upper valley is left unattended (particularly during construction of the road to the upper reaches of the valley);
- monitor wildlife sightings and roadkills continuously to assist in locating potential areas where additional mitigation is required;
- install a combination of speed restrictions and warning signs to minimize vehicle/wildlife collisions;
- revegetate roadside berms and ditches in a manner to allow visibility and minimize the potential for animal attractants;
- install speed bumps or rumble strips to alert drivers and ensure that speeds are reduced; and
- avoid using clover or alfalfa in any seed mixture used in reclamation of disturbed roadside sites, in order to make roadsides less attractive to wildlife.

Introduced Species

- adhere to strict policies on the presence of dogs, cats and exotic species in the proposed resort, including requiring pets to be on leashes and not to be left unattended outside;
- present a bylaw for animal control to SLRD;
- prohibit livestock from the resort area, since they may attract native carnivores; and
- if pack animals are to be used for recreational activities originating at the resort, seek approval for all plans through a formal application and review process, involving MELP.

Other

- implement appropriate mitigation measures to minimize impacts on wolverine, including controlling hunter/poacher access, ensuring good garbage management, providing appropriate education for staff, public and visitors, banning livestock, avoiding identified wolverine denning sites, developing and implementing a Problem Wildlife Plan, and controlling people access from the resort into adjacent valleys;
- continue surveillance of an active Golden Eagle nest site within 1 km of the Melvin Creek drainage annually, as a component of the wildlife monitoring program;
- minimize effects on other wildlife species, where possible;
- for species with fixed and local habitat requirements and/or those with colonial tendencies (e.g. water voles, hoary marmots, common pikas), undertake specific surveys prior to commencing individual developments to identify opportunities for mitigation (through minor relocations and adjustments);
- protect the primary area of occurrence for water voles in the Melvin Creek drainage in the wetland reserve (Water Vole Basin), in the upper valley near Melvin Lake;

- undertake a long-term, systematic monitoring program in the Melvin Creek valley (**Note** - The objectives are to document the local and general effects of the development, and to provide a basis for adaptive management in the valley (i.e. to change policies or implement modified mitigation and enhancement in response to new information or problems). The monitoring program is to be prepared and provided to the satisfaction of the RM-FWH during the ski area master planning process, and to include:
 - goat monitoring (see discussion of mountain goats – section 6.2.3.2.2);
 - biodiversity studies, based on the TVBRIM method;
 - species or group inventories, using RIC methods, as required (i.e. for red-listed and blue-listed species, pika, marmot and other species of concern);
 - establishment and maintenance of a formal reporting process for wildlife observations; and
 - monitoring of species for two years prior to significant construction (clearing, lift development) at a full scale during the first five years, and then monitoring of the species once every three years for a further 15 years);
- work with an education institution to establish an 'alpine institute' where alpine research and follow-up monitoring would be carried out;
- employ a project biologist or ecology specialist to review, comment upon (provide advice) and monitor all construction work, wildlife activities and water quality issues within and adjacent to the Melvin Creek drainage during the period required for resort construction; and
- develop and implement a Problem Wildlife Plan in consultation with the RM-FWH.

Status of Issue at Time of Referral to Ministers (6.2.3.2.1)

The project committee considers general wildlife issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- **Wildlife – general** – Localised impacts on some wildlife habitats and species are unavoidable in the immediate development area. However, with effective implementation of the mitigation measures proposed by NGR, the area of wildlife habitat directly affected will be largely limited to within the Melvin Creek drainage. There is no expectation that the sustainability of any wildlife population is at significant risk.
- **Biodiversity** – Localised long-term impacts on some vegetation communities and species habitats are unavoidable in the immediate development area, although they will be contained and minimized by careful design, and are not expected to have broader regional significance. NGR has committed to complete biodiversity studies and to develop a strategy to maintain biodiversity in the resort area, particularly in and around the rarer local habitats.

6.2.3.2.2 MOUNTAIN GOATS

Issue Treatment in Proponent's Project Report (6.2.3.2.2)

Additional mountain goat information was obtained through field surveys carried out in July and August 1998, and through a radio-tracking study in the area, being conducted at the time. These studies provided information regarding minimum population size and seasonal distribution of mountain goats in the Cayoosh Range, and also identified several special habitat features, including maternity areas and an apparent mineral lick. The general results from visual records and telemetry studies indicated that there was a fairly low level of use of the Melvin Creek drainage over the duration of the winter. It was also concluded that, while Melvin Creek was not a centre of kid production in the Cayoosh Range, it may be important to the local sub-population, especially during the early rearing period. A wildlife map indicating the locations of mineral licks, kidding areas, rutting areas, and migratory routes and trails was provided at a 1:20,000 scale.

NGR provided funding for the continuation of the mountain goat monitoring program (at that time being undertaken by FRBC) from April 1 to July 31, 1998. The results of this study were summarized and analysed in section 5 of the project report. In addition NGR committed to continuing mountain goat monitoring if the project receives an EA certificate.

Agency Review Comments on Project Report (6.2.3.2.2)

In its November 1, 1999 review comments, MELP outlined its plans to restore mountain goat populations within the Cayoosh Range to their observed historic levels. In some areas, to reach this goal would require a doubling of existing mountain goat numbers. The west ridge of the Melvin Creek drainage was identified as the only movement corridor between winter ranges within the north and south portions of the Cayoosh Range. MELP concluded that this corridor would have to be maintained in order to achieve the recovery of mountain goat populations. Further, MELP noted that determination of the potential for significant negative impacts of the project on mountain goats was a crucial outstanding issue which needed to be resolved before the review of the project could be completed.

MELP noted that many of the mitigative measures proposed in the project report were adequate to reduce impacts on mountain goats to an acceptable level. However, not all of the potential impacts were adequately addressed. In light of this, MELP proposed several mitigative measures to address the impacts of lift terminals and other resort infrastructure.

MELP identified the area accessed by Lift 5 as the only possible winter travel corridor between southern winter range in Barkley Valley and winter ranges in the northern portions of the Cayoosh Range. Thus, MELP anticipated that the operation of Lift 5 and any other lifts approaching ridge tops in this area would result in significant negative impacts on goat movements between these winter ranges. In light of these impacts, MELP recommended that Lift 5 be withdrawn from the development plan, pending the results of a monitoring program. This monitoring program would have to be developed in consultation with MELP, and proceed from the time of project approval, through construction and during operation of Lifts 2 and 11. MELP noted similar concerns with

respect to Lift 13, since it intrudes upon documented goat winter range and natal ranges in the upper portions of Green Valley. It was recommended that Lift 13 be removed from the development plan, pending the results of the monitoring program, which would include data collected after Lifts 3 and 6 (which also access the ridge between Second Lake and Green Valley) have been in operation. Since Lift 10 accesses much of the same terrain as Lift 13, it was expected to have the same impacts and concerns. Except for providing access into the area serviced by Lift 13, Lifts 3 and 6 service the same general area as Lift 10. Since it appeared that Lifts 3 and 6 could replace the need for Lift 10, MELP recommended that either Lift 10 be removed from the project development plan, subject to the above-noted monitoring program, or it be shortened so that access into the area serviced by Lift 13 is prevented.

In order to mitigate the adverse impacts on mountain goats travelling between winter ranges in the vicinity of Lifts 2, 8 and 11, MELP required that the upper terminals of those lifts be located approximately 50 vertical m below the ridge line. This vertical separation was deemed necessary to minimize noise and activity disturbances from lift machinery, staff and skiers to a level which would allow normal use and travel by goats on, and between, winter range.

MELP acknowledged NGR's recommendation for seasonal (April 30) closures on various resort facilities, including certain ski lifts and hiking trails, which would mitigate disturbances and negative impacts on pre-kidding movements, allow late-winter movements between winter ranges, spring movements to natal areas, and undisturbed early rearing in these areas. MELP accepted this mitigative measure for Lifts 2, 8 and 11, providing that the upper terminals are located 50 m below the ridge line. MELP also noted that there needed to be additional seasonal closures with respect to resort activities in the vicinity of areas utilised by mountain goats. These restrictions included: no winter or spring activities within 50 vertical m of any ridge-top travel routes, no activities on hiking trails within 1 km of critical mountain goat habitats during periods of potential use (e.g. May 1 – July 15), and no construction in critical areas between December 1 and July 15. With respect to hiking trails, MELP also made several recommendations restricting their location and the timing of access.

MELP expressed concern with the location of the communication tower on the ridge west of Twin Lakes, due to the potential for it to discourage goat use and travel between important winter and spring ranges via the West and Elliot Ridges. In order to address these concerns, MELP recommended several options: (a) that the tower be moved to a new location; (b) that it be constructed and serviced without building a road; or (c) if a road is built, that it would be removed and rehabilitated after construction of the tower was completed.

MELP also recommended that a detailed and effective 7 – 10 year monitoring plan for the entire Melvin Creek area be implemented as a condition of project approval to adequately measure goat use and determine impacts before, during and after resort development. The monitoring program would need to be designed and carried out by a qualified third-party consultant who is acceptable to both NGR and MELP.

Proponent's Responses to Agency Comments on Project Report (6.2.3.2.2)

A separate document was submitted by NGR on January 18, 2000, which provided detailed comments essentially justifying the mitigation measures proposed in the project report, and disputing the need for the additional measures requested by MELP. MELP responded January 29, 2000, disagreeing with various elements of NGR's submission, and providing justification for its position with regards to the mountain goat issue.

Independent Third-Party Evaluation of Mountain Goat Issue (6.2.3.2.2)

As was evidenced by the technical exchanges between NGR and MELP, there was a significant disagreement between MELP and NGR's wildlife consultants in their respective analyses and interpretations of the mountain goat data gathered for this project. MELP was particularly concerned with maintaining a viable corridor for possible winter movements along certain ridge tops (West Ridge and Barkley Ridge) on the western side of the Melvin Creek drainage. This stemmed from the opinion that the effects of the development could extend to mountain goats outside the Melvin Creek drainage, and possibly affect the Cayoosh population as a whole. NGR's consultants, on the other hand, maintained that any effects from the resort development would apply mostly to individuals which are sometimes present in the Melvin Creek drainage during critical seasons (winter and spring).

The EAO evaluated the level of disagreement between the expert positions on the mountain goat issue submitted by NGR and MELP and determined that an independent third-party review of the issue should be undertaken. Two mountain goat experts, Kim Poole and Daryll Hebert, were retained to review the positions of NGR and MELP, and to develop recommendations as to the appropriate resolution of this issue. Both NGR and MELP agreed to accept the conclusions of the third-party review. The final report, *Independent Third Party Evaluation of the Proposed Cayoosh Resort Development and Mountain Goat Issues* (third-party report) was submitted on February 29, 2000.

The third-party report outlined the provincial and local context for the mountain goat issue, and provided a brief review of the pertinent scientific literature. The discussion focussed on the four main issues which were identified as the major points of conflict between the MELP and NGR positions: (a) potential impacts of the resort on ridge movements (primarily winter/spring); (b) potential impacts during the spring parturition/early rearing period; (c) potential impacts on goat winter range; and (d) potential impacts on, and access to, the suspected mineral lick east of Melvin Lake. The third-party report concluded that although the proposed resort will have some negative impact on some goats in the Melvin Creek area, and possibly the Cayoosh Range, there was little evidence to suggest that the impacts would be significant at either the local or range population levels.

The report recommended several mitigation measures that were intended to reflect the level of potential impacts and risk to the Cayoosh Range mountain goat population. The mitigation measures were designed to minimize potential spatial and temporal goat disturbances, and thereby decrease impacts on the population from the resort development. The report noted that an adaptive management program should be followed, whereby all mitigation measures could be subject to modification as a result of additional information obtained during ongoing monitoring.

The recommended mitigation measures are summarized below:

- institute an April 30 season closure for Lifts 2, 5, 8, 10, 11 and 13, to minimize disturbance of late winter/spring movements to, and use of, pre-kidding, kidding and early rearing areas;
- grant approval-in-principle (i.e. EA certification) for Lift 5, with a review of its placement (i.e. exact location) to be undertaken, based on the outcome of further monitoring of the winter use of the West Ridge complex;
- remove and rehabilitate the road used for construction of the communications tower, and conduct servicing in winter, using either snowmobile or snowcat, and in summer, using helicopter (only when no mountain goats are known or suspected to be within a distance of 2,000 m within the line of sight);
- locate the upper terminal of Lift 2 at a minimum of 14 vertical m (to accommodate a 10-m vertical setback from the top of the terminal tower) and 50 lineal m from the summer goat trail on the West Ridge (**Note** - a site visit by MELP and NGR should be conducted to determine a mutually agreeable location for the upper terminal);
- locate the upper terminal of Lift 11 approximately 45 m below the West Ridge (as previously agreed to by MELP and NGR);
- locate the upper terminal of Lift 8 at a minimum of 14 vertical m (to accommodate a 10-m vertical setback from the top of the terminal tower) and 50 lineal m from the top of the Barkley Ridge (**Note** - a site visit by MELP and NGR should be conducted to determine a mutually agreeable location for the upper terminal);
- grant approval-in-principle (i.e. EA certification) to Lift 13 (currently scheduled for year 11 of project), with a review of its placement (i.e. exact location) and possible relocation to be undertaken if 10 years of additional telemetry monitoring (of the impacts of lifts 2, 5, 8, 10 and 11) determines that significant impacts have occurred, or would occur;
- prohibit construction in sub-units 3, 6, 7 and 8 (including the Twin Lakes area) between December 1 and July 15;
- concentrate hiking trails and lift access to those trails on the north side of the Melvin Creek basin, prohibit trails above 1,975 m in sub-units 3, 6, 7 and 8, and close trails below 1,975 m in those sub-units between May 1 and July 15 (a viewing area located within sight of, but at a safe distance from, the suspected mineral lick, could be constructed);
- prohibit recreational snowmobile activity within the Melvin Creek drainage;
- prohibit resort-based recreational helicopter activity beyond the bounds of the Melvin Creek watershed;
- upon completion of resort construction activities, prohibit all helicopter activity, with the exceptions of emergencies and occasional summer servicing of the communications tower; and
- prohibit out-of-bound skiers/snowboarders outside the Melvin Creek drainage (**Note** - manage this appropriately, through signage, fencing where required, and other necessary methods).

The third-party report also recommended that, if an EA certificate is granted, a monitoring program should be developed by consensus agreement between NGR and

MELP, and subject to independent scientific review. The report put forth a preliminary framework for the monitoring program, designed to provoke discussion around monitoring study design. The report stressed that the process should be viewed as one of adaptive management, such that information learned could be used to determine program effectiveness. If shortcomings of the mitigation measures are found, appropriate changes could be made.

At a meeting held March 13, 2000, MELP and NGR confirmed that the conclusions and recommendations presented in the third-party report were acceptable to both parties. It was further determined, for the purposes of EA-level review, that NGR would provide a broad-level commitment to ongoing goat monitoring, and that the details of the monitoring program would be worked out in conjunction with MELP and appropriate scientific experts during the post-EA stage. NGR, in its March 21, 2000 correspondence, provided the following commitment: "...*NGR Resort Consultants Inc. has committed to post-EA Certificate development and implementation of mountain goat monitoring. The terms of reference for this monitoring program would be developed by a committee made up of MELP biologists, independent wildlife consultants, Dr. Daryll Hebert, Kim Poole and NGR's biologist, Dr. Dave Hatler, plus any other persons that the committee should deem appropriate. The Monitoring Committee would develop objectives and outline study methods relating to the qualitative and/or quantitative aspects to be measured, and would provide a consistent and transparent procedure for interpreting and acting upon data obtained. Monitoring would be carried out during the preconstruction, construction and operation periods as specified by the Monitoring Committee...*" NGR committed to provide \$500,000 over a 10-year period or, on average, \$50,000 per year for each of 10 years for goat monitoring. Using other funds, NGR also committed to base someone onsite to assist with monitoring. At this meeting, NGR also committed to stop operating lift 5 if significant impacts to goat movement along the corridor were identified during monitoring, and, if impacts persisted, to close the lift and dismantle and remove it.

In its letter dated March 14, 2000, NGR committed to minimising disturbances to goats from helicopter use during construction, by ensuring that work would not be conducted if goats were within a 2000-m sight-line distance. NGR also committed to respecting a sight-line distance for any blasting, such that no blasting would take place if goats were within a 2000-m direct line-of-sight distance of the blast area.

At a subsequent meeting held March 16, 2000 between NGR, MELP and EAO to discuss wildlife habitat issues, MELP raised an outstanding concern with explosive use for avalanche control and its potential impacts on mountain goats. This issue was resolved when NGR committed to prepare an avalanche control plan to the satisfaction of the RM-FWH, and to monitor related impacts on mountain goats through the mountain goat monitoring program.

More recent discussions have clarified details of the proposed monitoring committee structure and operation. Details are listed in NGR's commitments related to mountain goats – see the end of this section. The committee will consist of MELP biologists, independent wildlife consultants (technical specialists in mountain goat biology who will be retained on an as-needed basis) and NGR's biologists, plus any other persons whom

the committee deems appropriate. The committee will make recommendations to MELP, and will be responsible for developing objectives and outlining study methods relating to the qualitative and/or quantitative aspects to be measured, and for providing a consistent and transparent procedure for interpreting and acting on data obtained. The committee will try to work by consensus, and independent committee members will assist in facilitating resolution of professional disagreements between NGR and MELP. An appeal process is also provided for, if MELP and NGR continue to disagree.

Public Comments on Issue and Project Committee's Position (6.2.3.2.2)

1. PUBLIC COMMENT:

Mountain goat concerns are being overstated, and are manageable.

PROJECT COMMITTEE POSITION:

Potential impacts on mountain goats from project development have been thoroughly considered, and with the assistance of the third-party review, the project committee has concluded that potential impacts are manageable with the proposed mitigation measures - see this section.

2. PUBLIC COMMENT:

Mountain goat issue has not been properly debated before the public.

PROJECT COMMITTEE POSITION:

Extensive opportunities have been provided for public input into the EA review of this project - see section 4.1. Mountain goat concerns were identified in many of the public submissions which raised project-related concerns, and the project committee has considered these comments in addressing the issue.

3. PUBLIC COMMENT:

There has not been an adequate impact assessment on the effects of the resort on mountain goats.

PROJECT COMMITTEE POSITION:

The project committee disagrees. There were extensive field surveys (including the FRBC-funded research) and detailed technical exchanges between NGR and MELP on these issues. In addition, the project committee commissioned two independent specialist mountain goat biologists to assess goat impact concerns. The committee is satisfied that an adequate assessment has been carried out - see this section.

First Nations Comments on Issue and Project Committee's Position (6.2.3.2.2)

A. Mountain Goat Impacts

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *Review of Wildlife and Habitat Assessment for St'at'imc Impact Assessment Study of the Proposed Cayoosh Resort Development*, dated March 16, 2000, and prepared by Raymond Demarchi and Carol Hartwig.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final, although St'at'imc Chiefs dispute the consultant's statement that MELP is legally responsible for wildlife in the province, since the province is deemed to have asserted jurisdiction over wildlife in St'at'imc territory without St'at'imc consent.

1. FIRST NATIONS ISSUE:

Mountain goats – MELP stressed goat concerns. However, the FRBC-funded goat study, which was modified to take account of the resort after originally being intended to guide timber harvesting, was weak in that it did not answer critical questions about movement patterns and habitat use in Melvin Creek, and was not interpreted for a recovered goat population, which minimizes the importance of Melvin Creek for goats. Too few goats were collared, and the collars did not have a GPS function, so that movements/locations between monitoring events were not recorded. No billies were collared in Melvin Creek. A GPS radiotelemetry study of goat movement patterns in Melvin Creek should be conducted, based on a study area defined by MELP's provincial ungulate specialist. Given underutilisation of goat habitat at present, lower-quality habitat niches must be inferred, and TEM would assist this process. Visual surveys in winter are hampered by rapid obliteration of tracks. However, one winter sighting of 62 animals is recorded. Melvin Creek would likely receive heavier use if the goat population were nearer historic levels. Habitat fragmentation through elimination of travel corridors would be a concern. Facilities near kidding areas could result in habitat abandonment. NGR's consultant and the Lemke study (1999) adopt differing views of the likelihood of development disturbances causing habitat abandonment.

PROPONENT RESPONSE:

The FRBC study was not designed to address all goat issues in Melvin Creek, although the radio-collared sample gave some priority to locations in the general vicinity of Melvin Creek. The report for that study (Lemke, S.L. 1999. *"Cayoosh Range Mountain Goat Study Results and Recommendations"*. FRBC Report, Re. Workplan TOM98403, Activity No. 10580, for BC MELP, Kamloops. 101pp.) was based on analysis of telemetry data, per its primary objectives. NGR/Wildeor, per their primary objectives, analyzed and used those data (not the Lemke report or conclusions). Wildeor's report conceded the possibility that the telemetry data might not be completely representative (see page 40, para 2), and also used other data sources and lines of reasoning in its analysis, and was not dependent on the radio-tracking study. It is difficult to name a BC mountain goat impact assessment which was based on better information. The assessment documentation included NGR's project report, the document prepared for the third-party review (Hatler, D.F., and G.F. Searing. 2000. *"Proposed Cayoosh Resort Development: Mountain Goat Data and Issues"*. Rep. Prep. For 3rd Party Review, NGR Resort Consultants Ltd., Sun Peaks, BC 17pp + appendices.), and the third-party review.

Regarding the notion of a recovered population, with only anecdotal information from the past (the 1966 Gates survey has not been produced), and no full survey since that time, there is no concrete evidence on the extent of recovery necessary, or to confirm that the current population is not already a recovered one. Moreover, any failure to interpret the data for a recovered population does not minimize the importance of Melvin Creek to goats. If current populations are indeed low, and animals are free to choose habitats with little or no competition, likely they would gravitate to the best habitats. If Melvin Creek supports some of the best habitats, then the failure to interpret for a recovered population maximizes the apparent importance of Melvin Creek. A recovered population would expand into other, less suitable areas not currently used by goats, and the relative contribution of Melvin Creek to the overall population would be diminished. If Melvin Creek is not among the best habitats, the NGR/Wildeor assessment is further supported.

NGR/Wildeor disagree with Ecodomain's comments on potential impacts. Ecodomain discounted the Lemke study as a reliable source of information for the Melvin Creek assessment (see above), but used a statement from Lemke's report in critiquing the NGR/Wildeor assessment. The quoted statement is from Lemke's Section 6.4, Access Management. NGR/Wildeor identified access effects, if not mitigated, as among the most important for mountain goats, although MELP disagreed. The relevant section of Lemke's report (6.3, *Commercial Recreational Development*) lists concerns and mitigation recommendations that accord with those in the project report.

PROJECT COMMITTEE POSITION:

MELP's Regional Wildlife Plan in 1983 outlines an objective to restore the mountain goat populations to 1960 levels in the Cayoosh Range. The original intent of the FRBC mountain goat study was to address logging concerns in adjacent watersheds. The FRBC study, which was already in progress for one year before the development entered the EA process, received some additional funding to expand the terms of reference to allow increased focus on the project development area. The intent of the study was to focus primarily on habitat, and was not designed or funded to explore population trends. NGR has committed to continuing mountain goat monitoring, and this further study should provide an inventory of the present mountain goat population monitored over time, and an adequate sampling of radio-collared mountain goats. The terms of reference of this study will be developed by a committee made up of MELP biologists, independent wildlife consultants and NGR's biologists. MELP's ungulate specialist will be directly involved in the development of the terms of reference for this study. Monitoring will be carried out during the pre-construction, construction and operations periods.

2. FIRST NATIONS ISSUE:

Third-party review of mountain goat studies – The third-party consultants flag the fact that the Lemke study was not intended to answer questions for the EA review of the resort proposal. They also note the limitations of VHF radio-collar goat monitoring, difficulties in identifying the cause of species decline at the population level, and the lack of research into ski resort impacts on goats. Despite this, the third-party

consultants conclude that there will be little impact on local and Cayoosh Range goat populations. There is no new insight into risk of impact at the sub-group and population level. The consultants place little weight on MELP's population recovery objective, and supported NGR's view that there is a difference between winter use and winter range. The St'at'imc consultants believe that the review should have been conducted by the Wildlife Branch and Resource Inventory Branch.

PROPONENT RESPONSE:

See response to item #1. The third-party reviewers had broad experience and expertise, conducted in-depth analysis of NGR's data, and viewed the areas of concern at Melvin Creek first-hand, so their assessment should not be discounted. Not only MELP employees are qualified to conduct such a review.

PROJECT COMMITTEE POSITION:

See the project committee's response to item #1. MELP's Wildlife Branch participated in setting up the third-party review of mountain goat issues, including the development of terms of reference and selection of appropriate qualified consultants. Both NGR and MELP agreed to accept the conclusions and recommendations of the third-party review

3. FIRST NATIONS ISSUE:

Wolves and wolf predation on mountain goats – NGR's consultants predict low wolf impacts, which fail to take account of the fact that the wolf population appears to be recovering. Improved access (roads, trails, etc.) provides ready corridors for wolf movement, and could increase mountain goat predation. The consultants recommended a predator access study to determine if road construction into sub-alpine/alpine areas within (or near) goat range will alter wolf/goat predator/prey relationships.

PROPONENT RESPONSE:

Since there was no historical record of wolves in the Cayoosh Range prior to the late 1990s, the term range expansion may be more appropriate than recovery. Concern for resort effects on wolf recovery is inconsistent with any suggested recovery goal for mountain goats. Any 'enhanced movements to alpine/subalpine areas' would occur only in winter, when NGR's data indicate that there is little prey available in the Melvin Creek drainage, and therefore little reason for wolves to travel there in that season. During the snow-free period, wolves can and do travel through and over alpine and subalpine habitats. A more likely scenario is that wolves will continue to exist in the Cayoosh Range, providing that (1) they are not deliberately and specifically exposed to human control, and (2) there is a sufficient prey base. They will likely avoid facilities such as the proposed resort, thereby creating a small local predator refuge for some prey individuals). The issue is not significant in this situation. Wolves are not now limited in their access to and around subalpine and alpine areas, except when snow conditions are limiting (soft and deep), at which time ungulate prey species are not present and small mammals are not available.

PROJECT COMMITTEE POSITION:

The project committee accepts the opinion of MELP's wildlife staff that wolves are not expected to be an unusual cause of predator access concern, given the number of people who will be at, or in the vicinity of, the development area. Wolves are not expected to travel up packed runs from the village core, where people are present. NGR has committed to prohibiting recreational snowmobile activity within the Melvin Creek drainage. There is some potential for wolves to use packed trails in adjacent drainages to access mountain goats. However this issue largely non-project-related, and is beyond the scope of the EA-review.

B. Impacts on Traditional Use of Mountain Goats by First Nations (Compton Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort – Cultural Heritage Study – Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key Points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. The report contained only limited ethnozoological information, and none of the documentation reviewed by the St'at'imc consultant contains site-specific information about St'at'imc occupation or use of the Melvin Creek area. Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area, including mountain goat.

The report cites a source which indicates that mountain goat was hunted for its flesh and other body parts. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area, including some less economically valuable, yet culturally significant, species.

1. FIRST NATIONS ISSUE:

[Note – The Compton report did not specifically raise mountain goat impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

During the course of the EA review of the project, there were conflicting professional opinions on whether or not mountain goats are likely to be significantly impacted by the development. Because of the importance of the issue, EAO commissioned a

third-party review of the issue, which concluded that the development "...will have some negative impact on some goats in the Melvin Creek area and possibly the Cayoosh Range...", but that there is "...little evidence that the impacts will be significant to either the local or range populations..." After due consideration, the project committee has accepted the findings of the third-party consultants. Thus, the project committee believes that, while the project may be associated with localised impacts on mountain goats, acceptable mitigation measures are proposed by NGR.

C. Impacts on Traditional Use of Mountain Goats by First Nations (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

The report notes that mountain goats were hunted north and east of Duffey Lake, usually prior to mating season, sometimes with the assistance of rock blinds. They were hunted for both their meat and hides, with the wool used for blankets, the horns for spear-heads, and the fat for food and other uses.

1. FIRST NATIONS ISSUE:

[Note - The Fountain report did not specifically raise mountain goat impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

See above, committee response to Compton study.

Proponent's Commitments Relevant to Issue (6.2.3.2.2)

Following the independent goat study evaluation, the proponent commits to:

- Implement a monitoring program, funded by NGR (\$500,000 funding, to be expended reasonably evenly over a 10-year period, recognizing a need to carry out more work in the initial years), and based on the following committee process:
 - terms of reference for the program will be developed by a committee made up of MELP biologists, independent wildlife consultants (technical specialists in mountain goat biology who will be retained on an as-needed basis) and NGR's biologists, plus any other persons whom the committee deems appropriate, including a recognised biometrician, with a background in environmental impact assessment and ungulate ecology, to provide statistical advice on the monitoring program on an as-needed basis;
 - any costs (i.e. travel and per diem) associated with independent members of the committee will be shared on a 50/50 basis between MELP and NGR;
 - the committee will make recommendations to MELP, and will be responsible for developing objectives and outlining study methods relating to the qualitative and/or quantitative aspects to be measured; and for providing a consistent and transparent procedure for interpreting and acting on data obtained;
 - based on the committee's recommendations, MELP will make decisions on appropriate monitoring requirements and related matters;

- where possible, decisions will emerge from consensus reached in committee deliberations;
- in the event of a dispute between MELP and NGR with respect to the measures to be implemented, independent expert(s) commissioned to participate in the committee's deliberations will attempt to employ their expertise to help mediate an overall consensus on issues in dispute;
- in the event that consensus is still not reached, the independent committee members will be expected to document their own positions on issues in dispute;
- MELP will receive the committee's advice, including the positions of independent members, and will make a decision;
- NGR will have the further option to seek dispute resolution by appealing MELP's decision to specified senior staff in MELP and BCAL for joint consideration and decision; and
- NGR agrees to abide by MELP's decisions or, in the event of appeal by NGR, by the decisions rendered by the appeal process.

Based on decisions rendered through the above committee process, NGR commits to:

- conduct monitoring during the pre-construction, construction and operations phases of resort development, with details to be finalized through the committee process if an EA certificate is granted;
- monitor impacts on goats resulting from avalanche control activities;
- use the monitoring results to guide the finalising of lift terminal placements; and
- if the results of monitoring warrant, revisit and appropriately revise mitigation commitments and plans to address impacts on mountain goats;

With respect to mountain goat impact mitigation, NGR specifically commits to:

- institute seasonal closures for Lifts 2, 5, 8, 10, 11 and 13 by April 30, to minimize disturbances to late winter/spring goat movements to, and use of, areas used during pre-kidding, kidding and early rearing (**Note** - to be reviewed, based upon monitoring program);
- review placement (i.e. exact location) of lift 5 (which is approved in principle), pending the outcome of monitoring intended to clarify winter use of the West Ridge complex;
- delay installation of Lift 5 for 5 years if additional telemetry and monitoring demonstrate that Lift 5 appears to be located directly on a regularly-used movement corridor, or if operation of Lift 2 demonstrates interruption of an important movement corridor along the ridge system used by a significant proportion (perhaps >25%) of the local wintering goats (**Note** - During the delay, evaluate the threshold effect of Lifts 2 and 11 on movements along the West Ridge complex, and the degree of habituation to these potential disturbances near the ridgeline);
- cease operating lift 5 if significant impacts on goat movement along the corridor are identified during monitoring, and, if impacts persist and the above committee process so determines, close the lift and remove it from operation;
- remove and rehabilitate the road used to construct the communications tower, following its construction (**Note** - Access for servicing the tower during winter will be

restricted to snowmobile or snowcat; and during summer, to helicopter, with helicopter use avoided when goats are known (or suspected) to be within a 2,000-m sight distance of the vicinity);

- site the upper terminal of Lift 2 at a minimum of 14 vertical m (to accommodate a 10-m vertical setback from the top of the terminal tower) and 50 lineal m from the summer goat trail on the West Ridge (**Note** - Conduct a site visit with MELP to determine a mutually agreeable location for this upper terminal of Lift 2);
- site the upper terminal of Lift 11 approximately 45 m below the West Ridge;
- site the upper terminal of Lift 8 at a minimum of 14 vertical m (to accommodate a 10-m vertical setback from the top of the terminal tower) and 50 lineal m from the top of the Upper Barkley Ridge (**Note** - Conduct a site visit with MELP to determine a mutually agreeable location for the upper terminal of Lift 8);
- conduct 10 years of additional telemetry and monitoring on the impacts of Lifts 2, 8, 10, 11, and 5 on goat use of the ridges and spring/summer habitat in sub-units 6, 7 and 8 (**Note** – Bearing in mind that Lift 13 is approved in principle, if significant impacts are detected or the slopes serviced by Lift 13 appear to receive extensive and regular use during winter, relocate the lift);
- prohibit construction in sub-units 3, 6, 7 or 8 (including the Twin Lakes area) between December 1 and July 15;
- concentrate hiking trails and lift access within the north side of the Melvin Creek basin (**Note** - Trails will not be located above 1,975 m in sub-units 3, 6, 7 and 8. Trails in these sub-units will be closed from May 1 until July 15);
- construct any goat-viewing area for the mineral lick at a safe distance from the mineral lick;
- prohibit recreational snowmobile and ATV activity within the Melvin Creek drainage;
- make reasonable efforts to discourage out-of-bound skiers/snowboarders from reaching areas outside the Melvin Creek drainage (**Note** - This will be managed through signage mainly, and fencing, where required);
- minimize the disturbance to goats from helicopters during construction, particularly during ski lift construction, through the following:
 - minimize helicopter activity beyond the bounds of the Melvin Creek watershed during construction;
 - ensure that goats are not subjected to surprise sudden noise created by helicopters, and that helicopters will stay as far from goats as safely possible;
 - ensure that helicopters are not flown within a 2,000-m distance of goats, unless they are located beyond a ridge and out of the line of site;
 - prohibit all resort-related recreational helicopter activity beyond the bounds of Melvin Creek during resort operations (excepting emergencies and occasional summer servicing of the communication tower); and
- undertake no construction activity in sub-units 3,6,7 or 8 between December 1 and July 15 (**Note** - Any proposed construction activity within these subunits should be presented to MELP, and any variance from the timing window would need agreement by MELP prior to construction. No blasting should take place at any time within the Melvin Creek drainage when mountain goats are within 2000 m of the work site (or other specified distance to be agreed between NGR and the RM-FWH)).

Status of Issue at Time of Referral to Ministers (6.2.3.2.2)

The project committee considers the mountain goat issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- ***Mountain goats*** – Differing interpretations by MELP and NGR's wildlife consultants in their respective analyses of the mountain goat data and project impact potential led EAO to commission a third-party review of issues in dispute by two recognised experts. Both NGR and MELP agreed to accept the findings of the third-party review, which concluded that impacts on goats, while they could be locally significant, would not be significant at the sub-population and population levels. Based on follow-up discussions between NGR and MELP, NGR has committed to fund a monitoring program. Assuming that the monitoring program is carried out effectively, and the results communicated to MELP in a timely manner, adaptive management and the implementation of mitigation measures should acceptably minimize impacts on mountain goats. There is no expectation that the sustainability of the regional goat population is at significant risk.

6.2.3.2.3 GRIZZLY BEARS

Issue Treatment in Proponent's Project Report (6.2.3.2.3)

Updated (1998) bear survey information was presented in section 5 of the project report. NGR noted that the functional population of bears in the Cayoosh area likely extended over a large area, spanning several Management Units, and that it is possible that bears in the Cayoosh uplands occasionally use the Melvin Creek drainage. Local grizzly bear densities in the Cayoosh Range were reported to be low, and sightings are rare. The report noted that, although the Melvin Creek watershed supports resources which are potentially attractive to grizzly bears (e.g. lush meadow habitats and marmot colonies), sightings have been infrequent. Reported sightings include a female and 2 cubs in 1997, one sighting during aerial surveys for the project, evidence of presence through marmot den excavations, and 2 sets of tracks. Human disturbance factors were not believed to be a likely cause of the low frequency in Melvin creek itself, because of the relative remoteness and inaccessibility of the drainage. Information regarding black and grizzly bear habitat features and documented occurrences in Melvin Creek and adjacent valleys was presented on a 1:50,000-scale map.

The report indicated that maintaining grizzly bears in the Cayoosh Range is a challenging, and that the project has the potential to become a 'population sink' for grizzly bears in the area without appropriate mitigation. Several mitigation measures to minimize potential impacts on grizzly bears were identified. These include: storage of food and garbage in bear-proof containers; locating visitor facilities away from habitats regularly used by bears; educating visitors and staff; regularly inspecting to ensure compliance with ant-food conditioning measures; and temporary closures of particular areas. NGR also committed to completing a grizzly/black bear management plan if the project is granted an EA certificate.

Agency Review Comments on Project Report (6.2.3.2.3)

The project committee raised no concerns with the information on grizzly bear issues presented in the project report.

Late Public Comments (6.2.3.2.3)

Two late public submissions, received by the EAO on November 22, 1999, were accepted by EAO for consideration by the project committee (see section 3.4.4 for further discussion). The two briefs were filed by the Society Promoting Environmental Conservation (SPEC) and McCrory Wildlife Services Inc. (McCrory).

The SPEC letter, dated November 22, 1999, noted that its principal concern related to the long-term cumulative impact that the proposed resort development and other future developments would have on the carnivore and ungulate wildlife populations within and adjacent to the Melvin Creek drainage. Specific reference was made to potential impacts on grizzly bear, mountain goat, wolverine and wolf populations.

Regarding grizzly bears, the SPEC correspondence included several maps pertaining to grizzly bear habitat in the vicinity of the project, as well as a letter regarding grizzly bear conservation, previously submitted to the Lillooet LRMP process. SPEC noted concern with what it felt was a lack of detailed information on grizzly bears populations in the project area. By referencing excerpts from past government correspondence and sections of a non-project-related grizzly bear report, SPEC attempted to illustrate that the grizzly bear issue had been intentionally ignored during the EA review. SPEC also criticised the level of grizzly bear information/assessment provided in NGR's project report. SPEC concluded that, with respect to grizzly bears, the resort development would severely impact the ecosystem of the Duffey Lake/Cayoosh Creek corridor and eventually result in the extinction of grizzly bears from this area. In order to address its concerns, SPEC advocated that the proposed resort be subjected to a full public hearing.

The McCrory submission, dated November 19, 1999, presented a detailed critique of the wildlife assessment and cumulative effects assessment which were included in the project report, specifically referring to the treatment of grizzly bear issues. McCrory outlined the rationale for determining that the wildlife and cumulative effects studies submitted by NGR were deficient. The specific concerns identified by McCrory can be summarized as:

- the scale/magnitude of development and its associated impacts not were adequately considered (e.g. impacts resulting from highway improvements and escalating traffic volumes);
- the project area was part of a large South Coastal Grizzly Bear Recovery Zone proposed by the provincial government as part of the Grizzly Bear Conservation Strategy, and resort development would be in direct conflict with this;
- resort development would fragment habitat and create a mortality sink for grizzly bears, leading to their extirpation from the Cayoosh Range within 10 to 20 years;
- due to proximity of the proposed resort to key existing and proposed parks, impacts of project would result in "islands of extinction" for grizzly bears; and

- resort development would effectively eliminate the only major north-south grizzly bear corridor in western BC.

Based upon these concerns McCrory made several recommendations to the project committee; (a) that a 2-to-5-year moratorium be placed on the resort development until adequate wildlife and cumulative effects assessments could be completed; (b) that a comprehensive assessment of the impact of the resort on grizzly bears, mountain goats, wolverine and other sensitive wildlife be undertaken for the entire ecosystem; (c) that this assessment be reviewed by an independent review panel of wildlife experts; and (d) that the proposed resort project be subjected to full public hearings.

Proponent's Response to Late Public Comments (6.2.3.2.3)

On January 27, NGR forwarded a written response to the SPEC and McCrory briefs, prepared by its wildlife consultant, David Hatler. In this response, Hatler disputed various points raised in the two briefs, and defended the information and conclusions presented in the project report. His points included the following:

- Grizzly bears (and also mountain goats) had been identified from the outset of project review as species of particular concern. Both had been given considerable attention during applicable field studies and in preparing the project report.
- Available evidence suggested that, although the study area supported good bear habitat and a few grizzly bears were still present, there had been relatively little grizzly bear use of observed habitats over at least the past decade.
- Notwithstanding the demonstrated low use, grizzly bears were being given priority attention, and if the project was granted an EA certificate, NGR would develop and implement a bear management plan.
- If the resort were the only development in the Cayoosh Range and mitigation was implemented as proposed, it would cause no detectable grizzly bear population changes. However, if the resort were to expand significantly beyond the current proposal and/or no mitigation was implemented, these conclusions would likely not apply. The public briefs did not present contrary evidence at that level.
- Hatler disagreed with SPEC and McCrory that the study area for assessment should have been the entire Lillooet ecosystem, with a primary focus on cumulative effects analysis. This larger-scale focus is not appropriate for single-project review, and, although cumulative effects analysis is potentially useful for long-term planning, such analysis is only at a preliminary stage of development, and is currently too speculative to provide accurate impact predictions at the project level.
- Concern over grizzly bear mortalities and the potential for the proposed resort to become a population sink are the primary focus for NGR's proposed mitigation measures. Hatler cited a study at Lake Louise, which suggested that, if steps were taken to minimize the factors which result in bear mortality, the animals could adapt and live with recreational developments.
- Predicted effects of the resort development on grizzly bear movement and/or population dispersal were overstated in the public briefs. Connectivity corridors are not 'wildlife highways', but rather, extensions of suitable habitat which may or may not be utilised by wildlife for dispersal. Little is known regarding what constitutes a viable movement corridor for a particular population.

- Hatler disagreed with visualising both Melvin Creek and the Cayoosh Range as an 'international connectivity corridor', based on available evidence on the historical movements of grizzly bears in this area. He also noted that, since the Rocky Mountains were recognised as an important grizzly bear connectivity corridor, the Melvin Creek resort could not legitimately be characterised as capable of eliminating the last international connectivity corridor.

MELP's Grizzly Bear Impact Analysis (6.2.3.2.3)

In a February 25, 2000 letter to the EAO, DFO, citing public concerns raised with respect to grizzly bear impacts, requested an opinion or analysis of on the potential impacts on the local grizzly bear population from experts or MELP in order to reach a conclusion on cumulative effects under CEAA. DFO expressed interest in impacts resulting from both the direct footprint of the project and due to increased recreational access to adjacent areas. DFO also requested that MELP comment on the significance of any identified impacts and suggest appropriate mitigation measures.

In its March 20, 2000 correspondence, NGR provided an updated Cayoosh Summer Visitor Profile. This letter report was submitted in response to concerns raised by DFO regarding potential impacts on wildlife from increased recreational use of adjacent valleys resulting from resort development (refer to sections 6.2.4 - *Cumulative Environmental Effects* and 6.3.3 *Recreation and Tourism Effects* - for further discussion of this issue). The report confirmed NGR's earlier position that, due to a number of factors, the resort development would have only a minor effect on the recreational use of adjacent valleys. NGR concluded that resort visitors' hiking activities could be managed within the Melvin Creek drainage by not providing trails and/or access into adjacent valleys, and by using information signage to direct the public to follow (and remain on) designated walking and hiking trails. NGR indicated its concurrence with any provincial land use designation(s) which would limit or restrict hiking into areas outside the Melvin Creek drainage.

On April 28, 2000, MELP provided the EAO with a report entitled: *An Analysis of the Potential Impacts of the Proposed Melvin Creek/Cayoosh Project on the Stein-Nahatlatch Grizzly Bear Population and Opportunities for Mitigation/Compensation* prepared by MELP Large Carnivore Specialist, Matt Austin. The report concluded that:

- even taking into account the mitigation measures committed to by NGR, the proposed resort development has the potential for substantial direct and cumulative impacts on the Stein-Nahatlatch grizzly bear population, and on the potential to recover this threatened population in the future;
- these impacts could be substantially addressed through a number of additional mitigative measures; and
- provided a comprehensive mitigation package was implemented, could potentially result in no net impact to the population.

The report concluded that the provincial government, rather than NGR, has the largest role to play in addressing those mitigation issues not already addressed by NGR's mitigation commitments. Key points in the report may be summarized as follows.

Threatened Grizzly bear Populations

- Any GBPU where the population is estimated to be less than 50% of the minimum current habitat capability is designated 'threatened'. Recovering threatened populations is important in achieving the first goal of the GBCS which is "...to maintain in perpetuity the diversity and abundance of grizzly bears and the ecosystems they depend upon throughout BC..."
- The designation of a grizzly bear population as "threatened" also has implications for forestry and land use planning. Within the Identified Wildlife Management Strategy (IWMS), under the *Forest Practices Code of BC Act*, Wildlife Habitat Areas can be created to protect critical habitats within threatened GBPUs. The IWMS also includes Higher Level Planning Recommendations for grizzly bears which clearly state that government will only present options to a planning table intended to ensure that populations do not become, or remain, threatened.

Stein-Nahatlatch Grizzly Bear Population Unit (GBPU)

- The proposed resort would be located within this 7515 km² GBPU, one of nine GBPUs in the province with grizzly bear populations which have been designated 'threatened' under MELP's Grizzly Bear Conservation Strategy (GBCS)
- The estimated habitat capability of the Stein-Nahatlatch GBPU is 189-318 grizzly bears, and the GBPU's current population estimate is 67, or 36% of the minimum habitat capability. The most significant factors are believed to be habitat alteration, human-caused mortality and the loss of habitat effectiveness (the ability and/or willingness of grizzly bears to use habitat) due to human disturbance.
- NGR has acknowledged that the Melvin Creek drainage contains highly suitable habitat that is currently subject to relatively little human disturbance.
- It is unclear at this time how much of the Stein-Nahatlatch GBPU is in core area condition (defined as any area >500 m from an open road). However, over 99% of the Melvin Creek drainage is currently core area. Grizzly bears, and in particular adult females, have been found to use core area habitats disproportionately to their occurrence on the landscape.
- Recreational use of the area surrounding the project is already increasing. Likely only a minority of resort guests will participate in backcountry recreational activities outside the Melvin Creek drainage, but resort workers will also do so. It is expected that recreational use of the surrounding area will expand incrementally, if the resort proceeds, in the absence of additional mitigation by the provincial government.

Mortality Risk Within the Melvin Creek Drainage

- As noted by NGR, the project has the potential to serve as a 'population sink' if grizzly bears are attracted, and are able to gain access, to non-natural foods such as garbage. In such circumstances, bears would be expected to quickly become food-conditioned, and the most likely result would be conflicts with people and a high risk of these animals being destroyed in order to protect property and public safety. The loss of individual animals has a greater conservation impact on a small, threatened population than on a large, healthy population.
- Mitigation of this impact should be NGR's responsibility. Implementation of a comprehensive bear management plan by NGR could substantially address this issue, resulting in a small residual increase in grizzly bear mortality risk in the Melvin Creek drainage, and could contribute to achieving no net impact on the Stein-

Nahatlatch GBPU. Although NGR has already committed to preparing a bear management plan acceptable to the RM-FWH, further discussions are required regarding the scope and content of this plan.

Mortality Risk Outside the Melvin Creek Drainage

- Increased recreational activity in areas adjacent to the resort development has the potential to increase the risk of human-caused grizzly bear mortality by increasing the potential for human-bear encounters, as well as opportunities for grizzly bears to become conditioned to human foods or garbage.
- To potentially achieve no net impact to the Stein-Nahatlatch grizzly bear population associated with this impact concern, efforts to reduce bear-human conflicts through education and improvements in infrastructure would need to be increased (NGR's role), and measures to limit human activity in these areas would need to be adopted (largely the role of government agencies).

Habitat Loss/Deterioration of Habitat Effectiveness Within the Melvin Creek Drainage

- Resort development would result in the direct loss of grizzly bear habitat, as well as a dramatic deterioration in the effectiveness of the remaining, currently highly effective, grizzly bear habitat in the Melvin Creek drainage.
- Impact mitigation should be NGR's responsibility. However, attempts to mitigate the impact of habitat loss and the deterioration of habitat effectiveness within the Melvin Creek drainage itself has a low likelihood of success. Any measures would only be meaningful if grizzly bears actually made use of this habitat, which could result in an increased mortality risk for these animals.
- Impact mitigation within the Melvin Creek drainage is not desirable. An alternative is off-site habitat enhancement elsewhere in the GBPU (e.g. prescribed burning or access management). NGR's off-site mitigation measures should be negotiated with MELP, and a commitment from NGR to undertake and/or fund off-site mitigation should be in place prior to project certification.

Deterioration of Habitat Effectiveness Outside the Melvin Creek Drainage

- Resort development has the potential to result in deterioration of habitat effectiveness in a large area surrounding the project (i.e. the northern portion of the Stein-Nahatlatch GBPU), associated with increased human activity.
- NGR has acknowledged that the project will contribute to an increase in new backcountry opportunities in the Cayoosh Range where access has been previously limited by the lack of roads. NGR has made commitments to measures that will reduce the movement of people from the project directly to surrounding drainages, and this partially addresses this issue.
- To date NGR has committed as follows:
 - restrict to a minimum helicopter activity in the Cayoosh Range during construction, and particularly outside the Melvin Creek watershed;
 - prohibit resort-related helicopter activity, once construction is completed (except for emergencies and occasional summer servicing of the communication tower);
 - obtain approval from the RM-FWH for mountain bike and equestrian trails;
 - operate only Lift 4 for summer sightseeing;

- establish a formal application and review process for pack animals used in recreational activities originating from the resort;
- install a combination of speed restrictions and warning signs to minimize vehicle-wildlife collisions;
- prevent building of hiking trails above 1 975 m in sub-units 3,6,7 and 8;
- de-activate and reclaim the road used to construct the communication tower;
- restrict public access to the upper terminals; and
- outside the ski season, prohibit public access to Elliott Ridge, the Upper Barkley Ridge and South Ridge areas, and to the upper Twin Lake bowl.
- The potential for deterioration of habitat effectiveness in surrounding areas resulting from increased human activity represents a significant impact with potential to reduce the likelihood of this population recovering in the future, unless additional mitigative measures are adopted, intended to minimize as much as possible the movement of people from the Melvin Creek drainage directly into surrounding drainages;
- Additional measures should be negotiated with MELP, and could include, but are not limited to not allowing: (a) overnight parking for non-guests or staff; (b) backpacks suitable for overnight trips on lifts; (c) any trails which provide access to neighboring drainages; and (d) recreational use of motorized vehicles.
- Potential impacts to grizzly bears resulting from increased human activity in areas adjacent to the project that do not originate directly from the resort are the responsibility of the provincial government. Mitigative measures could include placing a restriction on the issuance of commercial recreation tenures and managing access in the area surrounding the project through road deactivation, gating and/or legal restrictions under the *Wildlife Act* or the *Forest Practices Code of BC Act*.

Monitoring and Adaptive Management

The report recommended that an adaptive management approach be undertaken. This would consist of monitoring as well as an effective feedback mechanism that would allow the results of monitoring to influence the implementation of any mitigative measures adopted. Further, the report recommended that a monitoring plan that includes these principles be completed prior to the construction and operation of the project.

In the cover letter submitted with the Grizzly Bear Report, MELP noted that the most significant mitigation measures proposed in the report are linked to land use planning decisions in the area surrounding the proposed resort development. MELP suggested that these mitigation measures be discussed with regulatory agencies such as MoF and BCAL and that a package of recommendations be developed and presented to the Lillooet LRMP table for consideration.

In a cover letter to Matt Austin's report, Garry Alexander (MELP) summarized the key findings of the report. He also elaborated on the potential role of the Lillooet LRMP in addressing government's role in impact mitigation.

Follow-up Exchanges (6.2.3.2.3)

Under cover of an April 28, 2000 letter, EAO conveyed MELP's documentation to DFO. The letter commented on the MELP report, and also reported the advice of other key agencies, as follows:

- MELP's frame of reference for it's analysis has been to assess whether or not, with the implementation of impact management measures, the project could be developed in a manner which would entail no net adverse effects on the grizzly bear population in the Stein-Nahatlatch GBPU.
- Measures implemented by NGR would make a substantial contribution to addressing grizzly bear impacts, but would not, by themselves, address all impacts without government land use controls (e.g. implemented through the Lillooet LRMP).
- For LRMP processes, MELP has committed that, where grizzly bear populations are threatened, it will only present grizzly bear management options to planning tables which ensure that grizzly bear populations will not remain threatened.
- LUCO advised that:
 - The Lillooet LRMP planning process, covering the Melvin Creek area and areas to the east, is developing land use planning scenarios both with and without the resort project. The planning table appreciates the grizzly bear values along the Highway #99 corridor, and recognises that, if the resort proceeds, protection and maintenance of these values will require more management attention. The table is prepared to address the issue of potential deterioration of habitat effectiveness immediately outside the Melvin Creek drainage.
 - The LRMP table is working with a set of proposed resource management guidelines for grizzly bears, developed by MELP and a working group, including some options, but has not yet agreed on any of these choices.
 - The final LRMP recommendations will ultimately reflect social decisions that participants can accept, and which may not necessarily meet the original aspirations of all of the parties, including government agencies. The final form of the plan will address grizzly bear recovery, but at this time, there is no absolute assurance as to the level to which this will be addressed.
- BCAL advises that:
 - It supports government objectives for grizzly bear protection and recovery consistent with the draft objectives currently written into the Lillooet LRMP, to which government agencies have already made commitments.
 - If BCAL receives applications for Commercial Recreation tenures in the area of concern to MELP, then depending on the nature and scope of proposals, applications in critical habitat will require environmental assessments, including cumulative effects assessment, with specific focus on grizzly bears and goats.
 - BCAL favours case-by-case review over a blanket moratorium approach to Commercial Recreation applications. It currently has several applications under review, and anticipates an increasing ongoing demand for such activities in the area, with or without resort development. Thus, it will be difficult to distinguish between effects attributable to the resort and to broader trends.

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- MoF has advised that:
 - Access road controls are best addressed through the LRMP process. Given that the earliest that the resort could operate is 2004, there should be adequate time for the Lillooet LRMP planning table to complete its work.
 - Once public use of a road is established, it can be difficult to restrict that use. It is easier to establish controls for newly-created forest access.

On May 9, 2000, NGR submitted an updated *Winter/Summer Resort Activity Analysis*. This letter report outlined the methodology and assumptions used by NGR to analyze resort market potential and generate visitor forecasts. The visitor forecast was divided seasonally into winter (November 1 to April 30) and summer (June 15 to October 1).

NGR's Winter Analysis presented data from two separate marketing and financial models, as well as a third model which blended the previous two forecasts. The results of the analyses were presented in the following table.

Total Private Overnights	Year 3	Year 6	Year 9	Year 11	NGR Build-out Forecast
Lee Model	9750	21,125	34,187	45,472	
Hughes Model	25,220	65,312	96,395	112,630	
NGR private overnights	22,485	43,218	65,291	79,051	112,200
Total Public Overnights					
Lee Model	160,006	187,050	386,880	444,276	
Hughes Model	71,620	177,937	272,285	340,856	
NGR Public Overnights	115,813	182,493	329,582	392,566	
NGR Total Overnights Private & Public	138,296	225,711	394,875	471,617	568,950
Day Lift User	78,976	120,175	165,340	202,316	243,936
Overnight Lift Users	85,967	174,535	267,102	310,496	495,264
NGR Total Lift Visits	164,943	294,710	432,442	512,814	* 739,200
SCC	4980	7600	9390	10,440	11,550
Utilization	27.6%	31.0%	35.4%	35.1%	Max. Utilization 40%
Bed Units					
Private	750	1370	1970	2189	** 3740
Public	1750	2640	3710	4010	** 7586
Total	2500	4010	5680	6199	11,326
Employee					2860
				Total	14,186

NGR affirmed that the Melvin Creek/Cayoosh resort will be primarily a winter destination resort, and that, while it will receive summer visitation, it does not offer a unique international or national feature that could attract visitors to a site-specific summer destination (e.g. high waterfall, glacier tours, etc.). The summer season will be relatively short (ca. 115 days), due to the resort's high elevation and winter conditions that persist into late June. Summer marketing will focus on visitors already attracted to BC as their primary destination, especially those considering the Coast Mountain Circle Route and Sea to Sky corridor. The tourism product for summer overnight visitors will be sightseeing for individuals and groups (bus tours), and also some limited corporate conference business, once a major hotel is developed.

NGR based its summer analysis on experience of other ski resorts in BC - Whistler, Sun Peaks and Silver Star. Based on the experience at these resorts, NGR estimated that the Melvin Creek/Cayoosh resort would experience summer occupancy rates of 18% (private) and 30% (public) at build-out. Assuming that only 60% of available beds within each unit would be used, the total overnight visitation at build-out was estimated to be 203,480. Of these overnight visitors, only 10% are expected to consider a lift ride, and less than 5% are expected to participate in short nature tours organized by the resort.

With respect to summer day visitors, NGR expects that some sightseeing individuals would visit the resort while passing through the Duffey Lake corridor. NGR estimates that only 10-20% of travellers would venture up to the resort, due to the relatively steep and lengthy (12-km) access road.

At build-out, approximately 203,480 person nights of accommodation are anticipated for the summer season. Assuming an average length of stay of 2 nights, this translates to approximately 102,000 visitors. NGR predicts that 40% of overnight summer visitors will be property owners and summer destination guests seeking get-away vacations or conference business. The other 60% of overnight guests would be regional sightseeing travellers, representing the 10-12% of forecasted summer season traffic on Highway #99. In addition to those overnighiting at the resort, 10-20% of the forecasted traffic may visit the resort as day visitors. Thus, by the year 2020, NGR estimates that some 50,000 to 100,000 day visitors could travel to the resort over a 122-day summer season (or 400 to 820 people/day).

NGR noted that, although it was unlikely that the resort would attract 30% of Highway #99 traffic (10% overnighiting and 20% day visitors), it had assumed that this was achievable. Day visitors would most likely spend time in the village core, and only a small percentage would ride the chair lift and/or hike the valley or mountain trails. Based on Whistler's experience, approximately 2% of resort overnight and day visitors may hike over 3 km. At build-out, this would represent approximately 50 hikers per day over a 122-day hiking season (or 6070 hikers per summer). NGR is confident that this level of hiking activity can be retained within the Melvin Creek valley.

Potential Summer Visitors to Cayoosh Resort

Resort Guest	Year 3	Year 6	Year 9	Year 11	Build-out
Overnight Guests	12,246	33,941	64,785	91,825	203,480
Day Visitors (maximum estimate assumed)	15,000	25,000	35,000	45,000	100,000
Total	27,246	58,941	99,785	136,825	303,480

NGR noted that the resort will have permanent and seasonal employees for both winter and summer seasons. While a large majority of senior-level staff will live in Lillooet and Pemberton, the younger, more transient workforce will be accommodated at the resort. While the majority of resort operations jobs will be winter-only, the construction work will take place primarily between June 1 and October 31. Since most trades will be regionally based, most construction workers will reside in adjacent communities. NGR estimates that only 20-25% of summer staff (operations and construction) would reside on-site.

NGR expects few of the construction workers who live on-site to engage in many recreational activities at the resort. Longer day shifts will likely be required, and days off would most likely be spent at their residences away from the resort. Regarding the younger, more active employees living on-site in the summer season, NGR expects that training and education will provide them with a high level of environmental awareness, and compliance with any backcountry restrictions will be at a high level.

In terms of backcountry users (those travelling more than 500 m from Highway #99), NGR estimated that this group represents only approximately 10% of highway traffic. NGR further assumed that 60% of backcountry users belong to the regional resident population (Whistler/Pemberton/Lillooet). The Whistler/Pemberton communities were noted as representing an active backcountry recreation interest. NGR assumed that 10-15% of the Whistler population actively participates in backcountry activities. This would suggest that some 2,500 to 3,000 local backcountry participants use the Squamish to Duffey Lake corridor. NGR noted that the existing trail and park system in the region are extraordinary, and the proposed resort would not likely offer anything more attractive to backcountry users.

NGR also noted that many of the hikers and backcountry users in the Coast Mountains are Vancouver-based. NGR outlined some use statistics from the parks along the Sea to Sky corridor. These figures indicated that the majority of traffic, recreation and park use occurs in the southern end of the corridor. Almost 95% of park day use is concentrated in nine roadside parks. Backcountry hiking represents a very low percentage of regional visitors.

NGR reiterated its commitments for restricting backcountry recreation within the Melvin Creek valley, and thereby restricting access into adjacent drainages. No hiking trails would be located above 1975 m along the southern and western ridges, thus preventing hiking or alpine access in these areas. Alpine hiking/sightseeing will be restricted to areas on the north ridge, which have low summer goat use. The majority of hiking/biking trails will be located in the valley bottom, where conflicts can be more easily managed. Access into adjacent valleys will be limited by the rugged and steep terrain which separates them from the Melvin Creek valley. NGR has committed to place signage and provide information to reinforce access restrictions, and is confident that, through these measures, public access into alpine areas and adjacent valleys can be controlled.

The report concluded that:

- very few summer visitors to the resort are likely to hike outside of the drainage (no camping facilities would be located in the resort);
- day visitors will remain within Melvin Creek valley, since access to other drainages would require overnight camping;
- hiking by resort employees within the Melvin Creek valley is manageable, and employees should be educated to be motivated to protect the regional environment and wildlife, and to remain on designated trails;
- Duffey Lake corridor backcountry recreationists will not likely be resort guests, since complimentary or low-fee camping facilities and opportunities exist in the corridor. Those prepared for overnight hiking are well-equipped, and existing road camping is attractive to such users; and

- backcountry recreational use along the Duffey Lake corridor will continue to increase with or without the resort. Participation by resort guests or employees will be minor compared to Vancouver/Seattle and Sea-to-Sky residents. The contribution of resort-based backcountry impacts will not likely be at a level that is measurable.

On May 12, 2000 a meeting was held between NGR, MELP, DFO, DoE and EAO to discuss the outstanding measures required of NGR in order to adequately address the grizzly bear issue for the federal CEAA review. The parties concluded that NGR would address this issue by completing and committing to an outline for a Bear Management Plan (BMP) which would incorporate the mitigation measures outlined in MELP's April 28, 2000 report *An Analysis of the Potential Impacts of the Proposed Melvin Creek/Cayoosh Project on the Stein-Nahatlatch Grizzly Bear Population and Opportunities for Mitigation/Compensation*.

NGR's wildlife consultant proceeded to work with MELP to develop a satisfactory BMP outline. The final version described the means by which the BMP would be implemented and outlined the specific components to be included in the final plan. The implementation of the BMP will be overseen by a committee representing MELP and NGR biologists, with independent technical specialists retained on an as-needed basis. The committee will make recommendations to MELP on monitoring, measures to respond to issues identified through monitoring, the responsibility of the proponent and/or other parties for funding the implementation of any recommendations, and appropriate compensation measures. MELP will consider the committee's advice when determining appropriate levels of compensation to be implemented by the proponent and any disagreements with this decision will be resolved through a specified dispute resolution process. The components of the BMP will include: (1) an introduction to the context of bear management in the project area, (2) an action plan for identifying and minimizing bear problems, which includes consideration of: a reporting system, construction, infrastructure, education, garbage management, and outdoor activities; (3) a plan for dealing with bears in the Melvin Creek drainage which includes a decision flow chart that considers direct actions such as: aversive conditioning, capture/translocation, and destruction of bears; and (4) monitoring, adaptive management and compensation (both on and off-site). (Note: see complete BMP outline in Appendix D).

During May/June 2000, the EAO co-ordinated a series of discussions with MELP, MoF and BCAL to consider the role of the provincial government in addressing broader-scale grizzly bear impact mitigation measures not already addressed by NGR's BMP and other mitigation commitments. Through these discussions, it was determined that the means by which the provincial agencies would address these issues would be through a Memorandum of Understanding (MoU) between MELP, MoF and BCAL. The MoU is intended to establish a framework for the effective management, by the signatory agencies, of potential adverse impacts to grizzly bears and grizzly bear habitat resulting from increased recreational use of backcountry areas in the vicinity of the proposed resort. The deputy ministers of the three signatory agencies indicated their willingness to sign the MoU provided it was deemed by DFO to adequately address CEAA requirements for this issue.

The MOU essentially formalises a process through which the three signatory agencies will ensure that potential adverse impacts to grizzly bears and grizzly bear habitat in the area adjacent to the proposed resort are given due consideration when managing the issuance of Commercial Recreation tenures on Crown Land and the control of public use of roads accessing the backcountry (see complete MoU in Appendix E). The MOU specifies the area in which this agreement will function (area of applicability), the types of roads that could be affected by access management measures, and the processes through which the signatory agencies will determine what mitigation measures, if any, should be implemented. BCAL will refer any applications for Commercial Recreation tenures (within the defined area of applicability) to MELP for consideration with respect to potential impacts to grizzly bears and grizzly bear habitat. BCAL will only approve those applications which are jointly supported by MELP. Based upon MELP's assessment of the proponent's monitoring of public recreational use of existing resource roads, MELP and MoF will co-operate to identify and implement appropriate access management measures.

During the final resolution of grizzly bear issues in late June 2000, DFO made several requests pertaining to the details of the development of the BMP and its implementation. The first of these related to whether MELP had considered current Commercial Recreation tenures and tenure applications when assessing potential project-related impacts, and developing appropriate mitigation measures. In its June 26, 2000 letter, MELP indicated that it was generally aware of existing Commercial Recreation tenures and applications, but had not explicitly considered the specifics of each application. However, MELP indicated that the tenure applications did not affect the conclusions of its assessment of the potential project-related impacts on grizzly bears in the Stein-Nahatlatch GBPU. MELP noted that the provincial MoU would require referral to MELP of all Commercial Recreation applications in the MoU Area of Applicability, with approval of any applications dependent on MELP support, based on its consideration of the potential for impacts on grizzly bears. In addition, a recently-concluded province-wide protocol between MELP and BCAL would ensure that Commercial Recreation applications are not approved over MELP's objections where important physical and biological features are concerned.

The second of DFO's requested clarifications pertained to whether the province could ensure that the mitigation measures outlined in the BMP would be implemented in the event of proponent bankruptcy. In its June 27, 2000 correspondence, EAO notified DFO that BCAL had confirmed its willingness to arrange for *Land Act* bonding provisions to secure implementation of the BMP when the Master Development Agreement is being negotiated with NGR. EAO further confirmed that NGR had indicated agreement with this approach.

EAO provided finalized drafts of the BMP and MoU documents to DFO on June 27, 2000. A summary report from MELP Large Carnivore Specialist Matt Austin, entitled *An Assessment of the Additional Mitigation/Compensation Measures Adopted for the Proposed Melvin Creek/Cayoosh Project to Address Impacts on the Stein-Nahatlatch Grizzly Bear Population*, was forwarded to DFO on June 28, 2000. The MELP summary report was meant to supplement its April 28, 2000 document by outlining additional mitigative measures proposed by both NGR and the provincial government to address

potential impacts on the Stein-Nahatlatch grizzly bear population. Included in this summary report was a statement indicating that the Melvin Creek/Cayoosh project is not likely to result in a net impact on the Stein-Nahatlatch grizzly bear population, or on the potential to recover this threatened population in the future, providing that the monitoring and mitigation described in the outline of NGR's BMP and the MoU between provincial government agencies is effectively implemented, and that access management is undertaken where monitoring indicates a potential impact on grizzly bears.

In summary, since wildlife management is an area of provincial jurisdiction in the Stein-Nahatlatch Watershed, DFO sought clarification from MELP regarding potential effects (including cumulative environmental effects) on the Stein-Nahatlatch grizzly bear population. In response, DFO received advice from MELP that the potential impacts of the Melvin Creek/Cayoosh Project to the Stein-Nahatlatch grizzly bear population could be addressed through the mitigation measures outlined in the BMP and MoU. DFO has considered this information and all relevant information pertaining to grizzly bears, and has concluded that the project is not likely to cause significant adverse environmental effects on the Stein-Nahatlatch grizzly bear population, providing that the mitigation and monitoring measures proposed by NGR and province are effectively implemented.

Public Comments on Issue and Project Committee's Position (6.2.3.2.3)

1. PUBLIC COMMENT:

Nuisance bears should not be relocated to the Fraser Canyon, which already receives too many from the Lower Mainland.

PROJECT COMMITTEE POSITION:

If the project is granted an EA certificate, details relating to the relocation of nuisance bears will be addressed in NGR's Bear Management Plan – see this section and Appendix D.

2. PUBLIC COMMENT:

The proposed resort will fragment grizzly bear habitat and cause direct mortalities.

PROJECT COMMITTEE POSITION:

The Project Committee has given particular attention to the issue of discouraging bear/human interactions originating from the resort. Trapping and relocation of any nuisance bears will be considered before disposal. For its part, NGR has committed to developing and implementing a bear management plan (see Appendix D for framework outline) which will incorporate measures for managing any recreational use outside the Melvin Creek basin which originates directly from the resort. Under an MoU between MELP, MoF and BCAL, complementary measures will also be implemented by these three agencies to manage public use of surrounding areas, where this is deemed necessary to achieve grizzly bear management objectives (see MoU in Appendix E).

3. PUBLIC COMMENT:

Increased access will result in increased hunting, both legal and illegal, which will cause significant impacts to grizzly bears.

PROJECT COMMITTEE POSITION:

NGR has committed to seek the establishment of a 'no hunting' area in the Melvin Creek watershed. Restrictions imposed by NGR on visitors exiting the resort to engage in recreational use of surrounding areas should contribute substantially to addressing this concern. See also the project committee's response to item #1 and Appendices D and E.

4. PUBLIC COMMENT:

Potentially serious impacts on grizzly bears have not been adequately addressed.

PROJECT COMMITTEE POSITION:

The project committee accepts the professional judgement of MELP's grizzly bear specialists that the resort, even taking into account NGR's mitigation commitments, has the potential for substantial direct and cumulative impacts on the Stein-Nahatlatch grizzly bear population, and on the potential to recover the population in the future. However, MELP also notes that these impacts could be substantially addressed by a combination of mitigation measures. Given NGR's existing commitments, the most substantial additional mitigation responsibilities are those which would rest with the provincial government. Arrangements to implement these measures should be in place prior to the construction and operation of the project, and should be complemented by an adaptive management approach in which the results of an effective monitoring program influence the implementation of these measures. See also the issue discussion in this section, the response to item #1, above, and Appendices D and E.

First Nations Comments on Issue and Project Committee's Position (6.2.3.2.3)

A. Grizzly Bear Impacts

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *Review of Wildlife and Habitat Assessment for St'at'imc Impact Assessment Study of the Proposed Cayoosh Resort Development*, dated March 16, 2000, and prepared by Raymond Demarchi and Carol Hartwig.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final, although St'at'imc Chiefs dispute the consultant's statement that MELP is legally responsible for wildlife in the province, since the province is deemed to have asserted jurisdiction over wildlife in St'at'imc territory without St'at'imc consent.

1. FIRST NATIONS ISSUE:

Grizzly bear recovery area – The MELP Minister has declared the Stein-Nahatlatch grizzly bear population 'threatened', and designated the area to be a 'recovery area'. This has implications for the assessment, especially since the grizzly bear population in the Cayoosh and Melvin Creek watersheds was not inventoried or monitored. If recovery is the goal, even a small potential impact is contrary to recovery, and

therefore significant and adverse. Despite the view of NGR's consultant, there is evidence of a formerly much larger population. The Antifeau report (1980) and MELP Wildlife Branch information demonstrate the importance of Melvin Creek and surrounding areas for grizzly bear habitat. Open access and liberal hunting policies have depleted the Cayoosh area populations over time, and they appear to be in the early phase of recovery. As recovery progresses, bear/human conflicts at the resort could increase over the next 20 to 30 years.

PROPONENT RESPONSE:

The NGR/Wildeor assessment included consideration of the likely relative importance of the Melvin Creek drainage to bears in the Cayoosh Range. Based on these studies in Melvin Creek and adjacent drainages, there is no reason to conclude that Melvin Creek is pivotal, either as foraging or movement habitat. The Antifeau report does not demonstrate a formerly much larger population. If other MELP Wildlife Branch information so indicates, it has not been shared with NGR. Ecodomain's comments suggest that any other information is primarily in the form of habitat capability assessments. Such assessments are theoretical, not empirical, and not necessarily correct. The fact that an area could support higher numbers of bears is not evidence that it has done so. Ecodomain's grizzly bear section begins by stating: "...The statement by Hatler et al (1999) that 'There is no evidence that a separate, fully viable population of grizzly bears has ever existed in the Cayoosh Range' is both inaccurate and misleading.... Firstly, there are few areas of the size of the Cayoosh Range which support a '...separate viable population of grizzly bears...' That was also Wildeor's point, so the statement is accurate, not misleading. In any case, despite what the data indicated, NGR/Wildeor identified grizzly bears as the species of most concern after mountain goats, described the potential concerns, and identified the need for an appropriate mitigation plan. Ecodomain did not provide evidence to support its apparent position, for both goat and grizzly bear, that mitigation is not possible.

PROJECT COMMITTEE POSITION:

The project committee accepts the professional judgement of MELP's grizzly bear specialists that the resort, even taking into account NGR's mitigation commitments, has the potential for substantial direct and cumulative impacts on the Stein-Nahatlatch grizzly bear population, and on the potential to recover the population in the future. However, MELP has also stated that these impacts could be substantially addressed by a combination of mitigation measures. These measures are essentially two-fold: (1) a comprehensive bear management plan to be implemented by NGR – see framework outline in Appendix D; and (2) complementary measures to be implemented by government agencies (MELP, MoF and BCAL) to manage any increased recreational use of surrounding areas by resort visitors, residents and workers – see MoU in Appendix E. Given NGR's existing commitments, the most substantial additional mitigation responsibilities are those which would rest with the provincial government. NGR has committed to developing and implementing a bear management plan which includes measures for managing any recreational use outside the Melvin Creek basin which originates directly from the resort (e.g. people

hiking, biking, riding horses or driving motorised vehicles from the resort into neighbouring drainages). This plan is to be developed to the satisfaction of the RM-FWH, and if effectively implemented, will partially address the component of this issue that is under NGR's control. The intent should be to minimize, to the greatest degree possible, the movement of people from the Melvin Creek drainage directly into surrounding drainages. Arrangements to implement these measures should be in place prior to the construction and operation of the project, and should be complemented by an adaptive management approach in which the results of an effective monitoring program allow refinement of these measures.

2. FIRST NATIONS ISSUE:

Conduct a GPS radiotelemetry study of grizzly bears in Melvin Creek, based on a study area defined by MELP's provincial grizzly bear specialist.

PROPONENT RESPONSE:

The suggested GPS studies are not necessary for impact assessment at the EA certification level, and it is not clear that they would have great value.

PROJECT COMMITTEE POSITION:

GPS radiotelemetry is not a recommended means of determining bear movement in a study area. The Bear Management Plan which NGR has committed to develop and implement if the project is granted an EA certificate (see Appendix D for framework outline) is expected to incorporate appropriate monitoring and feedback mechanisms for adaptive management of this species.

B. Impacts on Traditional Use of Grizzly Bears by First Nations (Compton Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort – Cultural Heritage Study – Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. The report contained only limited ethnozoological information, and none of the documentation reviewed by the St'at'imc consultant contains site-specific information about St'at'imc occupation or use of the Melvin Creek area. Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area, including grizzly bear, which Compton identifies as blue-listed.

The report cites a source which indicates that grizzly bear were formerly trapped or shot with arrows by the St'at'imc. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area, including some less economically valuable, yet culturally significant, species.

1. FIRST NATIONS ISSUE:

[**Note** – *The Compton report did not specifically raise grizzly bear impact concerns associated with the proposed resort.*]

PROJECT COMMITTEE POSITION:

The project committee is satisfied that NGR has provided an adequate wildlife impact assessment for EA review purposes. With respect to impacts on grizzly bears and their habitat, the project committee believes that impacts on grizzly bears can be effectively managed by a combination of (1) measures to be implemented by NGR through a comprehensive bear management plan; and (2) complementary management of outdoor recreational activities in surrounding areas by government agencies. In part, the intent is that impacts on grizzly bears in and around the development area would be reduced through an adaptive management approach where monitoring and an effective feedback mechanism allow refinement of these measures. See this section for a description of the review of NGR's grizzly bear assessments, and also Appendices D and E.

C. Impacts on Traditional Use of Grizzly Bears by First Nations (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

The report notes that Grizzly bear were still plentiful in the study area in the early 20th Century, and were hunted for meat and hides.

1. FIRST NATIONS ISSUE:

[**Note** - *The Fountain report did not specifically raise grizzly bear impact concerns associated with the proposed resort.*]

PROJECT COMMITTEE POSITION:

See above, committee response to Compton study.

Proponent's Commitments Relevant to Issue (6.2.3.2.3)

In order to further address bear management issues, NGR has committed as follows:

- comply with the terms and conditions outlined in the document entitled *A Bear Management Plan for the Proposed Melvin Creek/Cayoosh Resort: Annotated Outline*, dated June 27, 2000;

Status of Issue at Time of Referral to Ministers (6.2.3.2.3)

The project committee considers grizzly bear issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Grizzly bears* – If the project proceeds, grizzly bear habitat in Melvin Creek valley will be unavailable for grizzly bear use, and there is also a risk of bear mortality associated with resort operations. Habitat avoidance and mortality risk in surrounding drainages may also occur, associated with increased people presence. Thus, the resort has the potential for substantial direct and cumulative impacts on the Stein-Nahatlatch grizzly bear population, and on the potential to recover the population in the future. MELP believes that these impacts could be substantially addressed by a combination of mitigation measures, which are essentially two-fold: (1) a comprehensive bear management plan, implemented by NGR – see framework outline in Appendix D; and (2) complementary measures implemented by government agencies (MELP, MoF and BCAL) to manage any increased recreational use of surrounding areas by resort visitors, residents and workers – see MoU in Appendix E. Together, these measures should ensure that the resort does not inhibit grizzly bear recovery goals and overall population sustainability in the region.

6.2.3.3 BIRDS

Issue(s) (6.2.3.3)

The issues identified included determining:

- whether or not riverine birds (dippers and Harlequin Ducks) and other species of concern (Spotted Owl) were using the area in the vicinity of the project site; and
- if so, the need for impact assessment and avoidance or mitigation actions.

Content of Application (6.2.3.3)

The potential impacts on birds from resort development were discussed in an October 1993 LGL Limited report, entitled *Environmental Impact Assessment of the Proposed Cayoosh Resort*, included in section 11 of NGR's application. This report noted that no Spotted Owls were directly observed, but that they may be present in the Melvin Creek watershed and if so, would be negatively impacted by any alteration of mature forest habitat in the upper valley. The report suggested that an inventory census be conducted to assess the presence of Spotted Owls prior to initiation of project construction, and that mitigation measures be based on the results of this study. The LGL report also noted that Harlequin Ducks probably occur in the Melvin Creek watershed.

Agency Review Comments on Application (6.2.3.3)

In its letter dated February 22, 1997, DoE outlined its concerns regarding possible impacts of the proposed resort on migratory birds. DoE supported the proposal to conduct a Spotted Owl inventory prior to project development, as outlined in the LGL report. In an attached memo from CWS, concerns with respect to potential impacts on Harlequin Ducks were also outlined. It was recommended that NGR undertake a Harlequin Duck breeding survey during the breeding season in order to assess the

presence/abundance of ducks in the area, and to propose mitigation measures based upon the results of the survey.

DoE's concerns regarding Spotted Owls and Harlequin Ducks were reiterated in its July 9, 1997 letter to the EAO. DoE recommended more specific measures to address its concerns. Regarding Spotted Owls, DoE requested that NGR communicate with the provincial Spotted Owl Recovery Team (SORT) to obtain advice on potential impacts to Spotted Owls and appropriate mitigation measures. DoE also requested a commitment from NGR to implement any recommendations provided by SORT. DoE noted that Harlequin Ducks nest in riparian areas adjacent to fast-flowing streams, are sensitive to disturbance, and appear to be declining on the west coast. A Harlequin Duck survey, carried out in the breeding season, was requested. Further, if the presence of Harlequin Ducks is identified, DoE requested that NGR establish 100-m minimum riparian buffers adjacent to streams.

Proponent's Responses to Agency Comments on Application (6.2.3.3)

NGR made no response to the issues raised by DoE with respect to birds prior to the development of the project report specifications.

Project Report Specifications (6.2.3.3)

The specifications reflected the above DoE/CWS concerns. Firstly (D.3(C)#1), NGR was required to communicate with SORT to obtain advice on potential impacts on Spotted Owls, and appropriate assessment and mitigation measures. Further, NGR was required to implement any advice obtained from SORT. Secondly (D.3(C)#2), regarding Harlequin Ducks, NGR was required to commit to employing a qualified biologist to undertake a survey during one breeding season prior to any project construction. If Harlequin Ducks were identified in the vicinity of the resort's on-site or off-site components, an appropriate mitigation strategy for any potential impacts, including setbacks of 100 m from duck habitat, where possible, was required. Consultations with CWS regarding appropriate mitigation would be necessary.

Issue Treatment in Proponent's Project Report (6.2.3.3)

A further discussion of Spotted Owl issues was presented in NGR's project report (Volume 1, section 4), which concluded that a significant occurrence, such as nesting, is unlikely in the upper valley. Such an occurrence would involve few individuals, and even if there were local impacts, the viability of the Cayoosh Range population was not likely to be threatened. NGR noted that potential impacts on Spotted Owls would be partially addressed through generic measures undertaken during project development, such as minimizing habitat alterations and the timing of construction activities to avoid the breeding season. NGR committed to undertake a specific set of standard surveys for Spotted Owls during the period when adults would be on or near a nesting territory, and to propose additional mitigation if results warrant, including avoidance of a confirmed nesting site.

NGR also included correspondence received from SORT, dated July 16, 1998. In their letter, SORT advised that the pre-construction Spotted Owl inventory proposed by NGR was an appropriate measure. SORT further advised that the only suitable mitigation for observed nesting/roosting sites is avoidance. NGR reaffirmed that, if warranted by the

results of the pre-construction inventory, additional measures to mitigate would be proposed, including avoidance of confirmed nesting sites.

Harlequin Duck issues were also further addressed in the project report (Volume 1, section 4). NGR noted that no Harlequin Ducks or nests were observed in the Melvin Creek valley, but that the habitat protection measures specified for riparian and wetland areas should be adequate to preserve the opportunity for nesting by Harlequin Ducks, if any were present in the area. NGR committed to retain a qualified biologist to undertake a survey for nesting Harlequin Ducks during the appropriate season prior to construction. NGR also committed that, if warranted by the results of the survey, additional mitigation measures would be undertaken, possibly including development setbacks for documented duck habitat. NGR noted that continued surveillance for Harlequin Ducks, at a less intensive level than the original survey, would be incorporated into the overall monitoring program proposed for the resort development. Again appropriate mitigative action would be undertaken, when warranted.

Agency Review Comments on Project Report (6.2.3.3)

In its October 12, 1999 letter, DoE noted that its concerns with respect to migratory birds would be satisfactorily addressed, provided that the commitments outlined by NGR in the project report and the additional conditions recommended by CWS (as per its September 8, 1999 document) were attached as conditions to the project approval certificate. The recommended CWS conditions were grouped into three categories: (a) Lakes, Wetlands and Streams; (b) Riparian Habitat; and (c) Harlequin Ducks. With respect to (a), CWS requested that NGR commit to set aside the three wetlands of highest concern (identified as polygons 1, 2 & 3 in the project report) as reserve areas. The purpose would be, in consultation with MELP and a biological consultant, to develop a detailed wetland protection plan. CWS also recommended contracting an independent consultant to undertake ongoing monitoring, providing regular reports directly to CWS and MELP. Respecting (b), CWS recommendations concerning riparian habitat included ensuring that the 2.5-km valley trail would be located as far from Melvin Creek as possible, and that it would minimize human disturbance on riparian habitat. Regarding (c), CWS requested that the Harlequin Duck obligations described in the specifications (D.3(C)#2) be attached as conditions to the project approval certificate.

In its March 10, 2000 letter, DoE/CWS reiterated all of the above-noted concerns. CWS acknowledged that NGR had, through previous commitments, adequately addressed its concerns regarding riparian habitat. However, CWS also confirmed that, before federal review of the project could be completed, NGR needed to recognise and agree to the commitments CWS had previously requested pertaining to lakes, wetlands and streams and Harlequin Ducks.

Proponent's Responses to Agency Comments on Project Report (6.2.3.3)

In its March 14, 2000 correspondence, NGR committed to the CWS requirements regarding wetlands, riparian habitat and Harlequin Ducks.

Follow-up Exchanges (6.2.3.3)

DoE/CWS, in its March 20, 2000 correspondence, indicated that its concerns with respect to migratory bird and wildlife issues had been adequately addressed by NGR's

commitments. However, DoE/CWS also commented that it had recently become aware of the potential for significant non-project-related-disturbances (i.e. logging by Ainsworth Lumber Co. Ltd.) to occur prior to resort development. This raised the concern that a significant disturbance could reduce wildlife and/or bird populations prior to any population surveys being undertaken. In light of this, DoE/CWS clarified that the Spotted Owl and Harlequin Duck survey must be undertaken prior to any disturbance, such as logging, blasting or road construction. Consultation with CWS to determine the most appropriate timing was also required.

In its March 24, 2000 correspondence, NGR committed to conducting a Harlequin Duck survey prior to any logging occurring in the Melvin Creek valley. Further, if logging was to be approved for the current year, NGR committed to conduct these surveys in May and June 2000. If logging was not approved for the current year, NGR committed to undertake the surveys in May and June 2001. On March 29, 2000, MELP requested confirmation that any Spotted Owl surveys would also be undertaken prior to forest harvesting activities in the valley. NGR responded on March 30, 2000 with confirmation that the studies would be conducted prior to any cutting in the upper valley (above the 1500 m elevation).

Public Comments on Issue and Project Committee's Position (6.2.3.3)

1. PUBLIC COMMENT:

More information is needed regarding the presence/absence and potential impacts on Spotted Owls, Golden Eagles and Harlequin Ducks.

PROJECT COMMITTEE POSITION:

The project committee is satisfied that the potential impacts of the project on bird species of concern have been adequately addressed for EA-level review purposes - see this section and the project committee's responses to First Nations issues.

First Nations Comments on Issue and Project Committee's Position (6.2.3.3)

A. Harlequin Duck Impacts

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *Review of Wildlife and Habitat Assessment for St'at'imc Impact Assessment Study of the Proposed Cayoosh Resort Development*, dated March 16, 2000, and prepared by Raymond Demarchi and Carol Hartwig.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final, although St'at'imc Chiefs dispute the consultant's statement that MELP is legally responsible for wildlife in the province, since the province is deemed to have asserted jurisdiction over wildlife in St'at'imc territory without St'at'imc consent.

1. FIRST NATIONS ISSUE:

Inadequate inventories – Given the significance of wildlife resources, the wildlife studies were inadequate for informed decisions. Inferences about presence or abundance of some species (e.g. Harlequin Duck and Spotted Owl) are made without current Melvin Creek survey data.

PROPONENT RESPONSE:

See section 6.2.3.2.1 (*Wildlife Resources – General*), response to First Nations item #2. Regarding Spotted Owl, this species, if it occurs at all, is most likely to occur in the lower, drier portion of the valley, which will be subject to logging, whether or not there is a ski development. Spotted Owl is surveyed by establishing night transects, with stations set up at intervals to listen for calls. In consultation with biologists experienced in those surveys (Donald Demarchi and John Surgenor, pers. comm.), it was confirmed that such surveys are logistically difficult and unsafe without roads or, at minimum, well-developed trails, and the specific survey was therefore deferred.

PROJECT COMMITTEE POSITION:

The project committee is satisfied with the conservative approach adopted in MELP and CWS advice, placing its emphasis on developing mitigation measures to address concerns, rather than on detailed inventory studies. NGR has committed to employ a qualified biological consultant to conduct a Harlequin Duck survey during the appropriate seasons and prior to any logging, blasting or road construction. This survey should determine Harlequin Duck presence and abundance in the development area. A one-season Spotted Owl inventory will also be conducted as part of NGR's commitments.

2. FIRST NATIONS ISSUE:

Harlequin Ducks - Have a qualified biological consultant conduct a Harlequin Duck survey prior to plan approval, and develop any required mitigation measures.

PROPONENT RESPONSE:

Intensive study activity in the area in recent years and professional judgement combine to suggest that Harlequin Duck is not a species of high concern in the area. Nevertheless, an intensive pre-development survey will be undertaken if the project is approved. Continued failure to find Harlequin Ducks in the area, even in intensive surveys, will not prove that they do not occasionally occur there, but it is not a focal species for EA certification purposes.

PROJECT COMMITTEE POSITION:

Further to the previous response, the project committee is satisfied with the recommendation of MELP and CWS that the survey need not be completed prior to an EA certification decision, providing that it is completed prior to any logging by Ainsworth, or any project construction disturbance.

B. Impacts on Traditional Use of Birds by First Nations

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort – Cultural Heritage Study – Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. The report contained only limited ethnozoological information, and none of the documentation reviewed by the St'at'imc consultant contains site-specific information about St'at'imc occupation or use of the Melvin Creek area.

Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area. These include at least 29 types of birds – Red-winged Blackbird, Mountain Bluebird, chickadee (various species), Red Crossbill, American Crow, American Dipper, Bald Eagle, Golden Eagle, Northern Flicker, Blue Grouse, Ruffed Grouse, gulls (various species), Gray Jay, hawks (various species), Rufous Hummingbird, Belted Kingfisher, Mallard, Magpie, Common Nighthawk, Clark's Nutcracker, Osprey, owls (various species), White-tailed Ptarmigan, Common Raven, American Robin, Common Snipe, swallows (various species), thrushes (various species) and woodpeckers (various species).

Compton reports that Spotted Owl was the only red-listed bird species listed in the June 1999 Wildeor/LGL report, which notes that, while the species has not been confirmed to be present in the Melvin Creek valley, one individual was seen in nearby uplands in the spring of 1997. It is not clear that any St'at'imc 'owl' terms refer to the Spotted Owl. Of blue-listed birds identified by Wildeor/LGL, only the Short-eared Owl is known to occur in the study area.

The report does not indicate in what way any of the above-mentioned bird species may be ethnobiologically significant, but notes that St'at'imc names exist for many of them, although not Harlequin Duck. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area, including some less economically valuable, yet culturally significant, bird species.

1. FIRST NATIONS ISSUE:

[Note – The Compton report did not specifically raise Harlequin Duck impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

A one-season Spotted Owl survey will be undertaken prior to forest harvesting activities in the valley. Further, an adaptive management approach will be implemented by NGR, utilising the results of the survey and implementing appropriate mitigation measures to avoid any confirmed nesting sites. CWS indicated that, of the migratory birds mentioned in the Compton Report, woodpeckers were included, but no specific species are referenced. With respect to the woodpecker species of particular concern, neither the COSEWIC vulnerable-listed Red-Headed Woodpecker (*Melanerpes erthrocephalus*) nor the COSEWIC threatened-listed and provincially red-listed White-Headed Woodpecker (*Picoides albolarvatus*) are known to exist in the subject area. Moreover, retention of riparian and wetland areas would minimize impacts on species which are utilizing such habitat types in the subject area. The project committee is satisfied that the combination of a pre-disturbance survey, retention of riparian and wetland areas and an adaptive management approach, adopted for construction, operation and maintenance of the project, will reduce any impacts on bird populations to acceptable levels.

Proponent's Commitments Relevant to Issue (6.2.3.3)

The proponent has committed to:

- address potential impacts on Spotted Owls through generic measures undertaken during project development, such as minimising habitat alterations and timing construction activities to avoid the breeding season;
- conduct a one-season Spotted Owl inventory prior to road construction;
- undertake a specific set of standard surveys for Spotted Owls, prior to any disturbance to the area, including logging, blasting or road construction or construction in the upper valley, during the period when adults would be on (or near) a nesting territory;
- be prepared to propose additional mitigation measures, if inventory results warrant, which would include avoidance of a confirmed nesting site;
- employ a qualified biological consultant to conduct a Harlequin Duck survey during the appropriate seasons, and prior to any disturbance, such as logging, blasting or road construction (**Note** - The presence and abundance of Harlequin Ducks in the area are to be determined);
- consult CWS regarding appropriate timing for the survey;
- employ a qualified biologist to monitor the proposed construction site prior to construction;
- if Harlequin ducks are discovered at the sites of the project's on-site and/or off-site components, develop an appropriate mitigation strategy for any potential impacts, including the adoption of setbacks from duck habitat of at least 100 m, if possible; and
- employ a qualified biologist to conduct surveillance for Harlequin ducks during resort operation to assess the failure and/or success of any implemented mitigation

measures, using an adaptive management approach (Note - Surveillance after the initial pre-disturbance Harlequin Duck survey will be determined in consultation with CWS, and will reflect the findings of the initial survey).

Status of Issue at Time of Referral to Ministers (6.2.3.3)

The project committee considers bird-related issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Birds* – Two species of interest have been noted – Harlequin Ducks and Spotted Owl. It is not clear that they occur in the Melvin Creek drainage - they were not identified during NGR's field surveys. NGR has committed to further field surveys if the project is granted an EA certificate, and if either species is identified, then to follow up with appropriate mitigation measures and further monitoring. The Melvin Creek is not a key habitat for either species, and the sustainability of neither is threatened by resort development.

6.2.3.4 THREATENED AND ENDANGERED VEGETATION COMMUNITIES

Issue(s) (6.2.3.4)

Two issues were addressed:

- the need to survey the area around the project site for threatened or endangered plants and/or plant communities; and
- the need to discuss impact management and long-term monitoring plans.

Content of Application (6.2.3.4)

Although the October 1993 *Environmental Impact Assessment* report by LGL Limited, which was included in section 11 of the application, identified and evaluated vegetative communities, it did not specifically identify or address potential resort impacts on threatened or endangered plants. The Melvin Creek valley was divided into six distinct vegetation communities: alpine, meadow, sub-alpine parkland, spruce forest, deciduous forest and bog. The report provided a general description of the location and most common plant and animal species for each of the identified vegetation communities, and impacts on each of these communities from resort development was discussed.

Agency Review Comments on Application (6.2.3.4)

In its February 24, 1997 letter, MELP noted that the discussion of rare and endangered species in the application was based on the results of a literature search, and limited to animal species. MELP requested that NGR review the literature to identify possible red-listed and blue-listed plant communities, and conduct ground transects to inventory any rare or endangered plant or animal species identified through literature review.

Proponent's Responses to Agency Comments on Application (6.2.3.4)

In a response to MELP, dated May 15, 1997, NGR agreed to conduct a review of possible red-listed and blue-listed plant communities during the summer of 1997. However, NGR noted that ground transects throughout the anticipated footprint of the resort were not planned until the post-EA period, after finalising the ski area master plan.

Project Report Specifications (6.2.3.4)

The specification required NGR to undertake a literature review of threatened and endangered plant species potentially present in the project area, and to complete field checks of any potential sites identified through the literature review (D.3(D)#1).

Issue Treatment in Proponent's Project Report (6.2.3.4)

The June 1999 Wildeor/LGL report *Wildlife, Habitat and Vegetation Assessment*, included in Volume 1, section 5 of the project report, provided more detailed information with respect to threatened and endangered plants and plant communities. Prior to conducting rare plant field surveys, data on rare plant occurrences in the Cayoosh Range were obtained from the Conservation Data Centre (CDC). Field surveys focussed on areas identified as having the least abundant vegetation types. Based upon CDC data, a list of rare plants which may occur in the Melvin Creek watershed was included in the report. The potential impacts of resort development on rare plants were described for the vegetation communities which were deemed to be of concern. Suggested mitigation measures were proposed to minimize these impacts, including avoiding development and restricting access in the vicinity of sensitive areas, and designing and locating trails to minimize disturbances to threatened or endangered plants. NGR also committed to confirming the presence/absence of threatened or endangered plant species at potential sites in the development area prior to construction. Where possible, NGR would alter site plans to avoid these plants, or transplant them to other appropriate habitat.

Agency Review Comments on Project Report (6.2.3.4)

No further concerns regarding potential impacts to threatened or endangered vegetation communities were raised by the project committee.

Proponent's Responses to Agency Comments on Project Report (6.2.3.4)

As no further concerns were identified, NGR provided no further comment on this issue.

Public Comments on Issue and Project Committee's Position (6.2.3.4)

Members of the public provided no specific comments regarding threatened or endangered vegetation communities.

First Nations Comments on Issue and Project Committee's Position (6.2.3.4)

A. Impacts on Traditional Use of Threatened and Endangered Vegetation by First Nations (Compton Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort – Cultural Heritage Study – Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is

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recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. None of the documentation reviewed by the St'at'imc consultant contains site-specific information about St'at'imc occupation or use of the Melvin Creek area.

Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area. These include at least 32 taxa of plants. Of the 'rare' or 'at risk' plant species which, according to the June 1999 Wildeor/LGL study, may occur in the Melvin Creek valley, although not actually recorded there to date by the authors, two have potential ethnobotanical significance for the St'at'imc - coyote or wild tobacco and spreading stickseed. Compton reports that, according to the 2000 *Provincial Vascular Plant Tracking List*, coyote tobacco is red-listed, while spreading stickseed is blue-listed.

The report provides little information indicating in what way these two species are ethnobiologically significant. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area.

1. FIRST NATIONS ISSUE:

[Note – The Compton report did not specifically raise threatened and endangered vegetation impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

The CDC collects and stores data on recorded occurrences of rare and endangered species, and maintains a dynamic database where records are added to or amended on a daily basis. A search on the CDC database on May 4, 2000 indicated that three specimens of a blue-listed species - *Hackelia diffusa* (spreading stickseed) – have been collected in the Lytton, Seton Lake and lower Stein areas. None of the documented sites were in direct proximity to the proposed development. In the CDC database, there is only one documented occurrence of *Nicotiana attenuata* (coyote or wild tobacco), which was recorded in the Osoyoos area. The scarcity of element occurrences should not be interpreted to mean that few rare elements occur in the proposed development area, only that this area has not yet been surveyed.

NGR's project report provided a predictive list of rare plants which may occur within the Melvin Creek watershed. The list is tentative, since it is based on general ecological preferences of plants, rather than on documented occurrences. A CDC database search in December 1998 indicated that there were two blue-listed plant species documented in the Cayoosh Pass – *Hydrophyllum fendleri* var. *albifrons* (pendler's waterleaf) and *Juncus regelii* (regel's rush). Pender's waterleaf was observed by NGR's consultants in Melvin Creek, and is common throughout the

upper forest zone of Melvin Creek. The species was removed from the CDC tracking list in 1999.

The Compton report listed 32 taxa of ethnobotanical significance to the St'at'imc which have been recorded within the proposed development area. In reviewing the Rare Plant Association Tracking List for the Lillooet Forest District, there do not appear to be any rare plant community associations among the 32 listed taxa of ethnobotanical significance. However, vegetation inventories in the province have not been thorough enough to allow provincial ecologists to confidently cite all of the forest districts within which each rare plant community occurs. To date no rare plant community occurrences have been mapped.

NGR has committed that, prior to any site disturbance for resort development purposes, a site-specific survey will be carried out in July and August, and that rare and endangered plants will be preserved, wherever possible, through modifications to trail and road alignments. The project committee is satisfied that NGR's commitments will adequately address potential impacts on threatened and endangered vegetation communities.

C. Impacts on Traditional Use of Plants by First Nations (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'tl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

The report notes that flora utilised by Stl'atl'imx and available in the Melvin Creek drainage included: high bush cranberry, dwarf blueberry (found in the mountains, harvested in September), mountain blueberry (picked in July), oval-leaved blueberry, swamp gooseberry, wood strawberry, wild blue-leaved strawberry, cow parsnip (gathered in spring until June), Indian potatoes (Western Spring beauty, dug in the spring or fall), and yellow avalanche lily (dug in July and August).

1. FIRST NATIONS ISSUE:

[Note - The Fountain report did not specifically raise vegetation impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

A CDC review of the plants discussed in the Kennedy/Bouchard Study indicates that none are rare or endangered. Refer above to the Project Committee's response to the Compton report for a more complete treatment of this issue.

Proponent's Commitments Relevant to Issue (6.2.3.4)

The proponent has committed to:

- further check potential sites in the development area to confirm the site-specific presence/absence of threatened and endangered plants prior to construction (**Note** - Measures to minimize impacts on these plants are to be developed, and where possible, site plans are to be altered. Additional mitigation measures may include

restricting access in the vicinity of sensitive areas, designing and locating trails to minimize disturbances, and transplanting potentially impacted plants to other appropriate habitats);

- prior to any site disturbance for resort development purposes, conduct a ground survey to inventory rare and endangered plants and fauna in July and August;
- conduct surveys at least twice during the flowering season, preferably in June and August; and
- wherever possible, preserve rare and endangered plants through modifications to trail and road alignments.

Status of Issue at Time of Referral to Ministers (6.2.3.4)

The project committee considers threatened and endangered vegetation community issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Rare plants* - Field surveys of rare plants were conducted in areas of high priority, based on the extent of a specific habitat within the landscape and the degree of alteration anticipated as a result of development. NGR committed to confirming the presence/absence of threatened or endangered plant species at potential development sites prior to construction, and where possible, to alter site plans to avoid these plants or transplant them to other appropriate habitat.

6.2.3.5 IMPACTS ON ALPINE VEGETATION

Issue(s) (6.2.3.5)

The issues identified included:

- the need to identify the potential impacts of ski runs on alpine vegetation, soils and downstream water quality; and
- proposals for mitigation measures to address these impacts.

Content of Application (6.2.3.5)

A general description of alpine habitat in the Melvin Creek watershed, and its characteristic plant and animal species was included in the October 1993 LGL report, included in section 11 of NGR's application. The report described the potential impacts on alpine habitat from resort development, including habitat loss, erosion and snow compaction, and proposed measures to mitigate those impacts.

Habitat loss would be a direct result of the terrain alteration associated with ski slope, access road, and chair-lift construction. Although only a small portion of alpine habitat would be modified for these activities, the vegetation underlying these sites would be lost or greatly modified. The report noted, however, that the loss of this relatively small amount of habitat would have only minor negative impacts on the small mammals and birds which live and breed in these alpine areas. Seeps and bogs, however, due to their relative rarity and importance to wildlife, would need to be avoided when constructing roads or trails.

The report noted that trails and roads have the potential to significantly modify adjacent habitats, especially in seeps and moist areas. The degree of impact is often directly related to the types of use to which the trail/road is put, with motorised vehicles causing the greatest impacts and hikers the least. The report explained that the extent to which hiking trails would modify the alpine vegetation is difficult to evaluate until more detailed planning has been done. In order to ensure that trails and roads would not be located on unstable soils or poorly drained areas, the report recommended that a soil scientist be consulted and a field survey undertaken prior to construction.

The report noted that ski slopes would likely be associated with increased snow compaction, and that this could have detrimental effects on alpine vegetation and wildlife. Careful planning of ski-slope location should minimize any destruction of natural vegetation from snow compaction. Ski slopes should not be located where extensive slope modification would be necessary, or in seeps or boggy areas.

Agency Review Comments on Application (6.2.3.5)

In its February 24, 1997 correspondence, MELP identified a shortage of information in NGR's application pertaining to the potential impacts from resort development on alpine vegetation. Consequently, MELP requested that NGR provide further detailed information to address its concerns. With respect to ski lift construction and associated access roads, NGR was requested to provide further details regarding construction methods, associated impacts and proposed mitigation measures. MELP also requested that NGR provide an impact assessment of the area affected by vegetation removal during ski slope preparation, a detailed methodology for revegetating impacted sites, and a description of measures proposed for erosion prevention and silt containment. MELP noted that the need to locate potential communication facilities in alpine areas was not addressed in the application. NGR was required to clarify whether these types of facilities (e.g. repeater sites) would be constructed as part of the project, and if so, to identify their locations and methods of construction, any potential impacts and proposed mitigative measures. NGR was required to provide a description and location of all the roads, trails and heli-pads associated with the project. Identification of any impacts associated with these features was also required.

Proponent's Responses to Agency Comments on Application (6.2.3.5)

NGR responded to MELP's alpine vegetation concerns in its May 15, 1997 correspondence. NGR noted that ski slope preparation at the resort would require only a minimal level of disturbance to alpine areas, and that any disturbed areas would be revegetated with native plants as soon as work was completed. While some forested areas would require flush cutting and slope grading, grading programs would likely be limited to lower elevations. To minimize erosion, slope grading would be undertaken after spring freshet, and erosion control fencing, matting and settling ponds would be utilised where necessary. NGR explained that it was premature to request details regarding the location and footprint of various resort facilities, since that level of planning would not be completed until the post-EA stage of review.

NGR also explained that some of the recommendations in the October, 1993 LGL report (which had been included in the application) were not practical for developing the resort. In particular, NGR noted that if implemented, the LGL recommendations regarding the

placement of upper lift terminals would likely require large excavations in alpine habitat, resulting in visual, noise and soil disturbances. NGR proposed that the naturally level areas near the ridge lines be considered for placement of the upper terminals, since there would be fewer associated impacts.

Project Report Specifications (6.2.3.5)

Since NGR's May 15, 1997 response letter did not alleviate MELP's concerns, the specifications reflected its earlier comments. NGR was required to indicate the intended types of lift construction and associated features considered for the alpine area, and to describe the potential impacts and proposed mitigative measures (D.3(E)#1). NGR was required to indicate which alpine areas would be subject to development, and to assess the impacts of the total ski slope preparation area, including identification of areas where native vegetation would be removed, documenting proven methods to revegetate those sites, and listing measures to prevent erosion and contain silt (D.3(E)#2). Also required, was a description of the types of communication facilities proposed for the alpine area, the associated construction methods, potential impacts, and proposed mitigation measures (D.3(E)#3). Finally, NGR was required to describe the types of roads, trails and heli-pads associated with the project (D.3(E)#4).

Issue Treatment in Proponent's Project Report (6.2.3.5)

In the project report (Volume 1, section 1, Appendix A), NGR outlined the construction anticipated in alpine areas, the potential impacts resulting from that construction, and the measures proposed to mitigate those impacts. NGR explained that lift towers located in the alpine would be constructed with the assistance of helicopters, in order to reduce impacts. However, some construction roads would be necessary to allow for heavy equipment to gain access for the site preparation of terminal stations. Mountain service roads would also be constructed, resulting in the greatest impacts to alpine habitat, due to their more permanent nature. NGR noted that these roads would be constructed to minimize negative effects, particularly by ensuring proper drainage and a durable surface, and revegetating adjacent areas to avoid erosion problems. Trenching would also be required for underground services and snowmaking systems. By using machines to dig the trenches and revegetating the trenches immediately, the disturbance to alpine vegetation would be minimized.

NGR noted that the location of upper lift terminals would have associated consequences. Due to the relatively large area of level terrain needed for the safe unloading of skiers (>20 meters), major excavation would be necessary unless naturally flat areas were utilised. Since such areas tend to occur on (or near) ridge lines, locating upper terminals in these areas would reduce the need for earth and vegetation disturbance. However, such siting would conflict with MELP concerns that upper terminals would disturb goat movements along the Barkley Valley and West Ridges. NGR noted that it had adjusted the locations of the upper terminals of lifts 2, 8 and 11 in order to reconcile both of the potential impacts.

The specific management issues associated with each lift to be located in the alpine area were discussed. Similarly, NGR provided information pertaining to the type, location, potential impacts and proposed mitigation measures associated with the communications structure, snowmaking facilities and hiking trails proposed for the

alpine. Estimates of the sizes of habitat areas to be affected by the construction of ski trails and other resort facilities were presented.

A report discussing the revegetation of the alpine area at Lake Louise Ski Resort was included in the project report (Volume 1, section 1, Appendix C) to address MELP questions respecting the ability to revegetate disturbed high-elevation areas. Additionally, the procedures/practices proposed to minimize environmental impacts during construction were detailed in the EMP included in the project report (Volume 1, section 4, Appendix 6).

Agency Review Comments on Project Report (6.2.3.5)

In its November 1, 1999 letter, MELP stated that the information provided in the project report met the requirements of the specifications regarding potential impacts on alpine vegetation. However, MELP noted that NGR should supplement its alpine revegetation information from other sources, such as studies done in B.C. for mine reclamation in alpine environments by the BC Technical and Research Committee on Reclamation. MELP also requested that NGR commit to the following conditions with respect to construction impacts in alpine areas: limit access for construction of most tower/upper lift sites to helicopter or winter road; reclaim sites to a stable condition with an appropriate species mix; and minimize alteration of vegetation for skiway or run construction.

Proponent's Responses to Agency Comments on Project Report (6.2.3.5)

In its January 18, 2000 correspondence, NGR outlined its position with respect to construction road access for upper lift terminals. NGR noted that most tower footing work in steeper terrain would be prepared manually, with equipment flown to the site. However, large chair lifts would require access to the upper terminal sites for construction and installation of bullwheels. Safety issues and cost factors are of much less concern when road access is available, and NGR estimates that without road access, the installation costs could potentially double, adding significantly to operations and maintenance costs. The lack of road access affects costs by requiring the lifts to be "bottom-drive". This type of lift is less efficient, and has a lower lift capacity and higher operating costs. NGR also noted that the use of an access road, rather than helicopter, would reduce the potential disturbance effects on mountain goats.

NGR noted that MELP's requests to relocate the upper terminals of several ski lifts away from ridge tops to minimize goat disturbances are inconsistent with the desire to avoid the use of construction access roads. Relocating the upper terminals would require severe blasting and soil disturbance, which in turn could trigger geotechnical hazards, and cause significant visual impact. NGR confirmed that all disturbed soils would be reclaimed with the appropriate species mix as soon as possible after disturbances have occurred.

Follow-up Exchanges (6.2.3.5)

In its March 1, 2000 correspondence, MELP noted that NGR needed to clarify whether winter/snow roads were feasible, and that, if NGR proposed to build permanent road access to the upper lift terminals, there would need to be further discussion of ways of restricting access to those roads during summer months. The intent would be to minimize human activity and disturbance at ridge lines. On March 14, 2000, NGR

clarified that the resort would require permanent road access to upper lift terminals. In order to address public access issues, NGR committed to reviewing each situation with BCAL and RM-FWH to seek methods to minimize public access, including gating the roads and prohibiting public vehicle use (including ATVs and snowmobiles). All public access would be prohibited on the West Ridge, Upper Twin Lake bowl and the South Ridge, in order to satisfy commitments regarding mountain goat management. NGR noted that it would expect revision of public access management measures if, after the results of wildlife monitoring, BCAL and the RM-FWH agreed that this was appropriate.

Public Comments on Issue and Project Committee's Position (6.2.3.5)

1. PUBLIC COMMENT:

Concerned about potential impacts on fragile alpine meadows from hikers, cross-country skiers and ATVs.

PROJECT COMMITTEE POSITION:

Motorised recreation vehicles (e.g. ATVs and snowmobiles) would be prohibited from resort. Potential impacts on alpine vegetation from recreation activities and/or other sources had been adequately addressed for EA-level review purposes - see this section and sections 6.2.3.2 (*Wildlife Resources*) and 6.3.3 (*Recreation and Tourism Effects*).

First Nations Comments on Issue and Project Committee's Position (6.2.3.5)

A. Impacts on Traditional Use of Threatened/Endangered Vegetation by First Nations

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Cultural Heritage Study - Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Key points - The Compton report is based on a review of literature sources, and defined the Melvin Creek drainage as the study area. It noted that there is much St'at'imc ethnobotanical documentation, although it does not represent all St'at'imc groups. None of the documentation reviewed by the St'at'imc consultant contains site-specific information about St'at'imc occupation or use of the Melvin Creek area.

Based on a review of 82 cited references, a total of ca. 94 taxa of ethnobiological significance to the St'at'imc are known to occur within the Melvin Creek study area. These include at least 32 taxa of plants, some of which are alpine species (e.g. kinnikinnick, cow-parsnip, fireweed, Indian hellebore, tiger lily, sedge, spring

beauty, wood strawberry, thistle, yarrow, lupine and many others – see Appendices E and F of the Compton report).

The report provides no information to indicate in what way alpine species are ethnobiologically significant. Compton recommends additional studies to fully document the occurrence and abundance of all wildlife and vegetation species of ethnobiological significance to the St'at'imc in the area.

1. **FIRST NATIONS ISSUE:**

[**Note** – The Compton report did not specifically raise alpine vegetation impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

With respect to occurrences of rare and endangered plant species, see the project committee's response to the Compton report in section 6.2.3.4 (*Threatened and Endangered Vegetation Communities*). NGR has committed to altering the alpine habitat as little as possible, and to reclaim any disturbed areas. The project committee is satisfied that these and other commitments will adequately limit impacts on alpine vegetation in the development area.

Proponent's Commitments Relevant to Issue (6.2.3.5)

Refer to NGR's commitments in section 6.2.3.2.1 - *Wildlife Resources - General (Alpine Belt)* for a list of all NGR commitments related to alpine vegetation.

Status of Issue at Time of Referral to Ministers (6.2.3.5)

The project committee considers alpine vegetation issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Rare plants* - Field surveys of rare plants were conducted in areas of high priority, based on the extent of a specific habitat within the landscape and the degree of alteration anticipated as a result of development. NGR committed to confirming the presence/absence of threatened or endangered plant species at potential development sites prior to construction, and where possible, to alter site plans to avoid these plants or transplant them to other appropriate habitat.

6.2.4 CUMULATIVE ENVIRONMENTAL EFFECTS

Issue(s) (6.2.4)

Legally, the basis for this issue arises from the requirements of the CEAA, under which the Responsible Authority (RA - in this case, DFO) must consider any cumulative environmental effects which are likely to result from the project, in combination with other projects or activities which have been or would be carried out. The provincial EA process also addresses cumulative effects, but selectively, where a concern is identified.

Content of Application (6.2.4)

Cumulative effects were not addressed in NGR's application.

Agency Review Comments on Application (6.2.4)

As noted in section 3.2.2, the CEA Agency determined early in the EA process that a CEAA review would be triggered for the Melvin Creek/Cayoosh resort project. DFO was confirmed as the RA for the CEAA review of this project, with responsibility for ensuring compliance with all aspects of federal EA review requirements. DFO, with the advice of the CEA Agency, determined that a screening study, rather than a comprehensive study, would be required. In order to satisfy CEAA requirements, a screening-level assessment must include a cumulative environmental effects assessment.

Proponent's Responses to Agency Comments on Application (6.2.4)

NGR did not provide comment on this issue prior to development of the specifications.

Project Report Specifications (6.2.4)

NGR was required to address cumulative environmental effects which could occur in connection with the proposed project, and advised to follow the approach outlined in A *Reference Guide for CEAA - Addressing Cumulative Environmental Effects* (FEARO, 1994). All on-site and off-site components of the project were included in the zone of impact to be used for the assessment (H.1#3).

Issue Treatment in Proponent's Project Report (6.2.4)

A cumulative environmental effects assessment was completed by Sector Environmental Resource Consulting in June, 1999 and included in Volume 2, section H of NGR's project report. The format of the report followed that outlined in the 1994 FEARO document. The report outlined the potential direct environmental effects of the project, as well as those of pertinent past, present and future projects in its vicinity. The interactions between the potential impacts of the resort development and other projects were discussed, together with measures to mitigate cumulative impacts.

The report concluded that other resource development and human activities within the Cayoosh Range had caused some specific local impacts, but had not significantly impacted the environment at a regional level. Furthermore, the nature and extent of cumulative effects attributable to the proposed resort would be generally low in both extent and severity. The additional mitigation measures and adaptive management monitoring outlined in the report would result in negligible negative cumulative impacts on local and regional environmental and socio-economic resources.

Agency Review Comments on Project Report (6.2.4)

In its letter dated October 12, 1999, DFO noted that the cumulative effects assessment had covered the required issues, but presented a generally weak discussion, due to the lack of empirical data. DFO was concerned that the study described impacts as minimal or minor without attempting to estimate them, and requested that all conclusions be substantiated. A list of what DFO considered to be unsubstantiated opinions or incorrect conclusions was included.

DFO also requested that NGR prepare a terms of reference for a monitoring plan which would ensure mitigation of any cumulative environmental effects. DFO noted that this was needed for federal reviewers to reach a determination regarding significant adverse environmental effects, as part of concluding the CEAA review.

Proponent's Responses to Agency Comments on Project Report (6.2.4)

Following a series of information/comment exchanges between NGR and DFO (November/December 1999), NGR provided a response to DFO's concerns with respect to cumulative environmental effects on February 18, 2000. NGR defended the report's use of qualitative discussion by identifying the lack of available empirical data, and noting the strength of the professional experience upon which much of the discussion relied. The response document subsequently addressed the specific concerns raised by DFO in its earlier comments. New information and discussion was provided to clarify the content of the original cumulative effects document, and to justify its conclusions.

NGR also listed the details of its monitoring commitments identified during the cumulative environmental effects assessment, including those with respect to water quality, wildlife and fisheries. Furthermore, NGR committed to preparing a monitoring plan regarding its management of both potential direct and cumulative impacts for approval of key agencies, following granting of an EA certificate, and prior to any site work being carried out. Monitoring would begin prior to the commencement of logging activities in Melvin Creek by Ainsworth, prior to any resort development and during the operational phases of the project. NGR stated that it would develop and present the specific monitoring regimes and frequencies within the appropriate timeframe context as a post-certification condition.

Follow-up Exchanges (6.2.4)

In its March 10, 2000 correspondence, DFO requested that NGR refine its cumulative environmental effects assessment by incorporating new wildlife information, and by providing further discussion on potential cumulative impacts on wildlife resulting from increased recreational access to areas adjacent to the Melvin Creek valley. Specifically, DFO requested that it incorporate the results of the third-party mountain goat report (see section 6.2.3.2), as well as any further comments from MELP regarding potential impacts on grizzly bears from increased recreational access. DFO stated that NGR would need to complete the aforementioned revisions to the cumulative environmental effects assessment before the CEAA review of the project could be concluded.

In an effort to address concern with the potential effects of increased recreational access resulting from the resort development, NGR provided an updated *Cayoosh Summer Visitor Profile* in its March 20, 2000 correspondence. The report confirmed NGR's earlier assessment of summer resort visitation, noting that the resort would attract overnight sightseeing visitors who would be seeking scenic alpine beauty, as well as regional and provincial bus tour groups. In addition, the 'get-away' visitors from Vancouver and the Seattle region would make up a significant portion of the resort's summer visitors. The average age of the greatest segment of overnight visitors would be between 55 and 65 years, while the second largest segment would be aged between 45 and 55 years. The

report noted that most summer visitors would remain in the village area, taking advantage of village-based attractions such as: swimming pools, tennis courts, cultural and music stands, and general village entertainment.

The report referenced the experiences at the Whistler/Blackcomb and Sun Peaks resorts, noting that most summer visitors tend to limit themselves to village-based activities, and relatively few partake in any strenuous hiking in alpine areas. NGR noted that it had committed to limit alpine trails to avoid conflicts with wildlife, and to avoid a possible connection into the Barkley valley area. Summer activity along the western and southern ridges would be limited to the forested areas below 1975 m, and the only lift-supported summer sightseeing activity would be via Lift 4, which accesses south-facing slopes. The focus for summer hiking trails would be south-facing slopes, since this area would have the least potential impacts on wildlife, and also would discourage public access into adjacent drainages, given the steep rugged adjoining slopes.

The report also identified the locations of the areas currently most utilised for backcountry recreation, and noted that due to their distance (> 25 km) from the Melvin Creek valley, the resort would not provide access to them. Although the Hurley Silver Mine and Barkley valley areas are in the vicinity of the resort, there would be no trails from the resort to provide access into these areas. The report stated that the resort would provide very limited access to the northern Cayoosh Range, but that better access was currently available from existing logging and other access roads.

NGR concluded that the hiking activities of resort visitors could be managed within the Melvin Creek drainage by not providing trails and/or access into adjacent valleys, and by using information signage to direct the public to follow (and remain on) designated walking and hiking trails. NGR indicated its concurrence with any provincial land use designation(s) which would limit or restrict hiking into areas outside the Melvin Creek drainage.

In its March 22, 2000 correspondence, MSBTC noted that the analysis and results of the report were reasonable, and that, by working with MELP to identify optimal trail locations and demonstrating that the resort would not demand intensive summer use of the alpine, NGR had adequately addressed the EA-level recreational access concerns.

On March 30, 2000, NGR responded to DFO comments by providing a revised version of the Cumulative Environmental Effects report. This revision incorporated further resource information from: (1) NGR's Response to MELP's Detailed Review Comments (January 2000); (2) NGR's Summer Visitor Profile (March 2000); and (3) the *Independent Third Party Evaluation of the Proposed Cayoosh Resort Development and Mountain Goat Issues* report (February 2000). On June 27, 2000, NGR provided DFO with further revisions to the Cumulative Environmental Effects report to reflect the analysis of cumulative impacts on grizzly bears undertaken by MELP. As noted in section 6.2.3.2.3, MELP also provided further information in a letter dated June 27, 2000, stating that potential impacts on the Stein-Nahatlatch grizzly bear population could be addressed through the mitigation measures outlined in the BMP and MoU.

DFO has considered all information provided regarding cumulative impacts of the project, and is satisfied that these issues have been addressed.

Note – cumulative effects issues as they relate to grizzly bear issues are documented in detail in section 6.2.3.2.3 – see above.

Public Comments on Issue and Project Committee's Position (6.2.4)

1. PUBLIC COMMENT:

The cumulative effects assessment had serious deficiencies. A 2-to-5-year moratorium should be instituted until a more adequate and comprehensive cumulative effects assessment can be completed.

PROJECT COMMITTEE POSITION:

Deficiencies in the cumulative effects assessment were noted by DFO in a letter dated October 12, 1999. Generally speaking, an analysis of cumulative environmental effects focuses on residual direct effects of the project which cannot be mitigated. These effects accumulate and interact with the environmental effects of other past, present and future projects over time. As noted in the above discussion, the concerns raised by DFO were addressed through further discussions with MELP, MoTH, MoF and BCAL. DFO has concluded that the mitigation measures which are to be taken by both NGR and the provincial government will address cumulative effects of the project, and that there will not be significant adverse environmental effects if these measures are implemented effectively.

First Nations Comments on Issue and Project Committee's Position (6.2.4)

A. Cumulative Wildlife Impacts

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *Review of Wildlife and Habitat Assessment for St'at'imc Impact Assessment Study of the Proposed Cayoosh Resort Development*, dated March 16, 2000, and prepared by Raymond Demarchi and Carol Hartwig.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final, although St'at'imc Chiefs dispute the consultant's statement that MELP is legally responsible for wildlife in the province, since the province is deemed to have asserted jurisdiction over wildlife in St'at'imc territory without St'at'imc consent.

1. FIRST NATIONS ISSUE:

Inadequate wildlife inventories – Given the significance of wildlife resources, the wildlife studies were inadequate for informed decisions. The wildlife study area was not large enough to assess biological or population impacts, especially on wide-ranging species (e.g. grizzly bears, wolverine, wolves).

PROPONENT RESPONSE:

See section 6.2.3.2.1 (*Wildlife Resources – General*), response to First Nations #2.

PROJECT COMMITTEE POSITION:

The wildlife inventories submitted by NGR were deemed adequate by the project committee and MELP staff to complete an assessment of the potential effects of the project for strategic-level EA review purposes. If the project is granted an EA certificate, further work would be completed prior to development, consistent with NGR's commitments. This work would include detailed riparian evaluations, a one-season Spotted Owl inventory, a July/August ground survey prior to any site disturbance to inventory rare and endangered plants and fauna, and inspection to confirm the site-specific presence/absence of threatened and endangered plants at potential sites in the development area. The Grizzly Bear Assessment Report by MELP's Carnivore Specialist describes the area which could potentially be impacted by the project, and refers to mitigation/compensation measures which could address the impacts. These measures are essentially two-fold: (1) a comprehensive bear management plan to be implemented by NGR – see Appendix D for framework outline; and (2) complementary measures to be implemented by government agencies (MELP, MoF and BCAL) to manage any increased recreational use of surrounding areas by resort visitors, residents and workers – see MoU in Appendix E. Although no further study is proposed, follow-up monitoring is recommended to confirm the effectiveness of agreed-to measures.

2. FIRST NATIONS ISSUE:

Impacts beyond Melvin Creek – Ecosign indicated in a 1999 report that the area could support up to 27,900 skiers per day, although the current EA application is for 12,000 skiers per day. The expansion potential has not been assessed during the EA review, including MELP's wildlife assessments. The wildlife study area should have been larger, especially if expansion plans are possible. Adventure tourism opportunities associated with the resort are not being addressed in the EA process in general, or the wildlife studies in particular.

PROPONENT RESPONSE:

See section 6.2.3.2.1 (*Wildlife Resources – General*), response to First Nations #8.

PROJECT COMMITTEE POSITION:

The EA Act legislates that the review process will focus on the project as proposed by the proponent. It is not the task of project committees to speculate on possible future modifications or expansions of projects under review. Section 2.1.8 of this report lists the procedural options available to government to consider future proposals to modify a certified project, once development is underway. Having said that, it is true that it would be difficult to accommodate 27,900 skiers per day at the proposed resort location, even if technically, that much skiable terrain could be identified. It is unlikely that proposals for resort expansion on anything like that scale in the future would be approvable, given the priority which needs to be placed minimising off-site environmental effects if the resort proceeds in its current form (e.g. to protect grizzly bear values). Much of the focus of the EA review has been placed on measures to contain this resort within the Melvin Creek drainage, because

of significant concern over impacts on surrounding drainages. It is for this reason that EA certification is being recommended by the project committee on the basis that the resort NOT sponsor any recreational activities such as adventure tourism outside the drainage (e.g. helicopter recreation). In addition to the role of the EA process in establishing appropriate location, design and operating constraints on the resort, the project committee recognises that there is also a role for land use planning processes (e.g. through the Lillooet LRMP) and resource management agencies in ensuring that non-resort-related backcountry recreation activities in surrounding areas are effectively managed – see, for example, the discussion of grizzly bear impacts in section 6.2.3.2.3.

3. FIRST NATIONS ISSUE:

Helicopter skiing – would cause new wildlife impacts. Helicopter recreation should be prohibited in the Cayoosh Range. Even though NGR commits that helicopter-based tourism will not be incorporated into the resort's operational plan, there could be pressure from others to base helicopter operations at the resort.

PROPONENT RESPONSE:

See section 6.2.3.2.1 (*Wildlife Resources – General*), response to First Nations #9.

PROJECT COMMITTEE POSITION:

The EA review is limited in scope to the proposed project and its potential impacts (see response to item #8). The resort will not include helicopter-based recreation activities (neither heli-skiing nor heli-hiking). The EA review does not have the mandate to assess impacts from non-project-related helicopter-based recreation, except in the more generalised context of the resort project's cumulative environmental effects (see section 6.2.4). MELP has identified the potential impacts of non-resort-related helicopter-based recreation on key wildlife species (e.g. mountain goat, grizzly bear) in discussions with appropriate regulatory agencies, notably BCAL. BCAL's position is that any applications for heli-skiing which have the potential to impact on critical goat and grizzly bear habitat would require environmental impact assessments, including addressing cumulative impacts. MELP would be one of the key reviewing agencies.

4. FIRST NATIONS ISSUE:

Highway #99 – There is no wildlife impact assessment for the increased traffic. Traffic on Highway #99 will increase at least ten times from the current 1,000 vehicles per day to 10,000 per day as a direct result of the resort. Wildlife impacts could be significant, and should be studied. Highways cause habitat fragmentation for wide-ranging species such as grizzly bears and wolverine. The consultants recommend a Highway #99 wildlife impact assessment, based on year-round traffic flows as they relate to seasonal wildlife movements.

PROPONENT RESPONSE:

See section 6.2.3.2.1 (*Wildlife Resources – General*), response to First Nations #10.

PROJECT COMMITTEE POSITION:

As discussed in section 6.2.3.2.1 (*Wildlife Resources – General*), Highway #99 traffic will not increase by a factor of 10, rather, based upon recent forecasts undertaken by MoTH for the Highway #99 Corridor Plan, traffic volumes will essentially double over a 25 year horizon. These forecasted volumes include the effects of the proposed resort being approved and constructed. According to MoTH records, 20 wildlife vehicle collisions (2 bear black bear and 18 deer) occurred on Highway #99 between Mount Currie and Lillooet from 1991 to 1999. Although these numbers are only approximate, they are relatively low which would indicate that there is not likely a significant wildlife/vehicle conflict. The steep terrain and location of feeding/grazing areas relative to Highway #99 support the notion that the significance of impacts to wildlife from highway traffic will not increase over time. MELP has indicated that it would work with MoTH to address and mitigate any future identified impacts on wildlife from increased use of Highway #99.

5. FIRST NATIONS ISSUE:

Comparing resort developments in National Parks – The resort should be examined in light of the setting outside a protected area, where it is more difficult to control people's activities and access. It will be more difficult to control out-of-bounds skiing, biking and horseback riding. The experience at other ski resorts (e.g. in the Purcell Mountains of southeastern BC and elsewhere in the Rocky Mountains (e.g. in BC, Alberta and Colorado) should be examined.

PROPONENT RESPONSE:

See section 6.2.3.2.1 (*Wildlife Resources – General*), response to First Nations #13.

PROJECT COMMITTEE POSITION:

Although the EA review is limited in scope to the proposed project and its potential impacts, and does not undertake broad-based investigations of the type suggested here, where readily available, experience elsewhere is factored into assessments, and this has occurred in this case. The project committee is satisfied that measures committed to by NGR will adequately address the issue. A small number of winter visitors and employees may ski out-of-bounds into adjacent backcountry areas, but this problem would be limited, due to the steep and dangerous access into most of the adjacent valleys, and a range of other measures to be implemented by NGR to discourage this. NGR has committed to address the issue of all-season activities outside the boundaries of the development and to implement means to minimize public access from within the resort itself to areas outside the Melvin Creek drainage.

Proponent's Commitments Relevant to Issue (6.2.4)

Refer to other relevant sections for commitments addressing specific issues, notably section 6.2.3.2.1 (*Grizzly Bears*).

Status of Issue at Time of Referral to Ministers (6.2.4)

The project committee considers that cumulative environmental effects have been resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Cumulative environmental effects* - The project will be largely confined to the Melvin Creek drainage, and will have only limited (and manageable) impacts on surrounding drainages. To ensure that the project does not adversely affect the outdoor recreation and wildlife values in adjacent drainages, NGR has committed to: (1) limiting alpine trails to avoid conflicts with wildlife; (2) to avoid a possible connection into the surrounding valleys; and (3) to place information signage directing the public to use and remain on designated walking and hiking trails. In particular, NGR has committed to a variety of grizzly bear impact management measures to contain project effects which might otherwise be felt over a large area. Adaptive management and implementation of appropriate mitigation measures by NGR, coupled, where necessary, with complementary action by government agencies, should minimize cumulative environmental impacts resulting from the development.

6.3 LAND USE EFFECTS

6.3.1 FOREST RESOURCES

Issue(s) (6.3.1)

Issues included:

- the potential for the project development to result in incremental restrictions on logging activity; and
- the need to establish the extent of other potential logging activity in the Melvin Creek valley as part of assessing the resort proposal.

Content of Application (6.3.1)

In the application (section 3.9), NGR included a 1990 report entitled *Financial Impact Study – Depletion of Timber Allocation from the Melvin Creek Drainage*, prepared by Sterling Wood Group Inc. This report analysed the potential impact of removing the Melvin Creek area from the Lillooet TSA, specifically discussing the consequences for the Crown and the licensee, Ainsworth Lumber Co. Ltd. (Ainsworth). The report concluded that Ainsworth would be affected through loss of cutting rights, increased overhead and administration costs, and long-term planning losses. The Crown would be affected through a permanent reduction in stumpage revenue. The report also noted that impacts on both the timber licensee and the Crown would be substantially minimized through the harvest of timber during resort development.

Agency Review Comments on Application (6.3.1)

MoF, in its February 25, 1997 letter, outlined some outstanding concerns with respect to the long-term and short-term impacts of the resort development on the timber supply for the Lillooet TSA, due to the removal of timber harvesting land from the provincial forest.

MoF noted that the project could have positive short-term and negative long-term impacts on the licensee and the Crown, but that the outdated information provided in the application made this difficult to determine. MoF will require a re-analysis of effects, using up-to-date information, at the post-EA permitting stage.

Proponent's Responses to Agency Comments on Application (6.3.1)

NGR responded to MoF's concerns in a letter of May 12, 1997, outlining its understanding of the timber harvest issue. NGR noted that it commissioned the 1990 *Financial Impact Study* in order to address concerns raised by MoF prior to commencement of the EA process. The information used in the study was provided by MoF and Ainsworth. NGR had met with Ainsworth, which agreed to a revised cutting plan, limiting timber harvesting to locations proposed for resort development. The purpose of the 1990 study was to illustrate the 'order of magnitude' difference between the revenues and benefits of developing the resort versus merely harvesting the timber. Over the long term, the resort development would provide more economic benefits than would logging the valley. Logging, on the other hand, would virtually eliminate the tourism potential of the valley until a second growth forest was 30 to 35 years old. NGR had proposed a shared approach, in which the proposed timber harvest would be reduced by thirty to forty percent, thereby preserving the tourism potential of the valley. Following EA certification, NGR proposed that it and Ainsworth would work with MoF to determine the locations of the access road and timber harvesting operations.

Project Report Specifications (6.3.1)

The project committee determined that no further EA reporting requirements were necessary for this issue, since outstanding concerns could be addressed at the post-EA stage of project review.

Issue Treatment in Proponent's Project Report (6.3.1)

In the project report, NGR noted that it was continuing to work with Ainsworth and MoF to develop a logging plan which would be compatible with future tourism use. All parties have agreed to an access road alignment, and some cutting plans had been developed. Cutting of the proposed development sites and some lower ski trails had been proposed. Timber harvesting would not involve clear-cutting, and would retain immature timber on development sites.

Agency Review Comments on Project Report (6.3.1)

Review agencies made no comment on the information presented in the project report.

Proponent's Responses to Agency Comments on Project Report (6.3.1)

Since no outstanding concerns were identified, NGR provided no further comment on this issue.

Follow-up Exchanges (6.3.1)

During the March 17, 2000 project committee meeting, MELP raised a concern with respect to the forest harvesting proposed for Melvin Creek valley. Specifically, MELP wanted to ensure that, if the project was approved, and Ainsworth was to commence logging prior to resort development, it would be required to abide by NGR's habitat

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protection conditions and commitments associated with resort development, particularly those respecting riparian buffers.

In correspondence dated March 24, 2000, MoF clarified the process through which logging road access and timber harvesting would be developed and regulated in normal situations. MoF noted that, should the forest license-holder, in this case Ainsworth, make an application for road access construction or timber harvesting in the Melvin Creek valley, a road permit and cutting permit would be required under its forest license (issued under the *Forest Act*). Ainsworth could make application for these permits regardless of the outcome of the project certification process for the resort.

Cutting permits and road permits are issued on the basis of approved operational plans, including Forest Development Plans (FDP) and silviculture prescriptions. Ainsworth would prepare these operational plans in accordance with the *Forest Act* and the *Forest Practices Code of BC Act*, and for review and possible approval by MoF's District Manager. When considering the operational plans, all pertinent information about the area, including the recommendations of the project committee and the plans and commitments of NGR, would be taken into account by the District Manager. In this case, Ainsworth is known to be working with NGR to co-ordinate its developments with those of the resort proposal.

MELP outlined its position with respect to this issue in its March 24, 2000 correspondence. It reiterated its concern that any logging in the valley should abide by the commitments and conditions for habitat protection (riparian buffer protection, maintenance of mature timber on ski runs, gladed runs, feathered edges, etc.), since the *Forest Practices Code* would not necessarily protect these values to the extent required for permanent resort development. MELP noted that, in order to ensure that any logging would adhere to the commitments made by NGR, any EA certificate should bind MoF to place the appropriate restrictions on any logging approvals, notably restricting any MoF approval of logging by Ainsworth to areas shown on the Master Plan as being commercial core, residential development, road, or ski run. No logging should take place until the ski area master plan has been completed. MELP stressed its desire that logging near the edge of riparian areas and ski runs would leave a feathered "windfirm" edge, as committed to by NGR.

MELP concluded that it would provide its concerns in writing to the MoF District Manager, and that the project committee should recommend to ministers that they issue a directive to MoF, restricting all forest harvesting in the Melvin Creek valley to the commitments and conditions developed during the EA Review. On April 18, 2000, MELP outlined its concerns in a letter to the MoF District Manager. MELP requested that the District Manager consider the commitments made by NGR with respect to forest harvesting and habitat protection when determining the acceptability of the Ainsworth FDP for the Melvin Creek area (FL #18700). MELP noted that it was important for MoF to consider the cumulative effects of the Ainsworth FDP and the ski resort development, since the impacts would be more severe if both proceeded.

In its April 26, 2000 correspondence, NGR outlined the results of an April 18, 2000 meeting between itself, Ainsworth and MoF. NGR noted that, during the meeting,

Ainsworth had confirmed that its detailed harvest planning would respect the needs of the ski resort development, if it were approved. Measures that would be considered by Ainsworth could include: (1) partial cutting and retention of stems or groups of stems on a site-specific basis; (2) glading in some leave areas; (3) partial stem retention in the valley bottom outside of the resort development area; and (4) retention of ski trail border timber in blocks where ski trails are proposed. NGR reported Ainsworth's agreement that detailed harvesting prescriptions would be developed and mutually agreed upon with NGR and MoF, following the EA certification decision, if the project is certified.

NGR acknowledged MELP's concern that more than 45% of the timber in the valley would be impacted by Ainsworth's logging plans, with additional logging plans possible. NGR explained that the required logging would occur over ten years, and that partial reforestation and gladed trails are anticipated in certain areas, with complete revegetation assured for the ski trails. NGR also clarified that its own past reference was to 45.5% of *fully* forested areas be altered. The 620 ha of sub-alpine forested area in the valley was not included in the 45.5% calculation, which was limited to the 682.8 ha of *fully* forested areas. If the area of sub-alpine forest is added to the equation, the percentage of altered forested area drops to almost half of the 45.5%.

NGR stated that the resort development, as proposed, would require 331 ha of altered forest area. This would consist of mostly ski trails and gladed areas, with the remainder occurring on development sites and the road right-of-way. At present, the Ainsworth harvest plan totals 237.7 ha, including road right-of-way (ca. 33 ha) and additional cutting below the village site (22.7 ha). NGR noted that, with the exception of the 22.7 ha area, all Ainsworth harvesting would occur within the 331 ha identified by NGR for resort development.

With respect to cumulative impacts, NGR noted that, although it had not previously considered the additional 22.7 ha of harvesting, the latter would have a temporary cumulative effect only, since the area would be replanted immediately. In addition, the last timber harvesting for Lifts 12 and 13, involving more than 227 ha, would not occur for some 14 or 15 years after the harvesting undertaken by Ainsworth. NGR affirmed that, by that time, the temporary impacts of the original Ainsworth harvest would be significantly reduced, which, in turn, would significantly reduce potential siltation, hydrology or wildlife habitat impacts. Further, NGR reported that Ainsworth would not harvest above the 2068 m elevation, and that its entire harvesting plan would involve only approximately 9.5% equivalent clear area, which is well below the 20-30% ECA range commonly used to flag potential hydrological concerns. Finally, NGR noted that MoF and Ainsworth agreed to consider the riparian area concerns identified by MELP, and that Ainsworth had agreed to respect the 15-m Melvin Creek riparian zone buffer to the extent that it is operationally possible.

Ainsworth clarified details of its proposed FDP, and its relationship to NGR's proposed resort development, in a letter to MoF, dated May 5, 2000. In this correspondence, Ainsworth outlined the substance of the discussions of an April 18, 2000 meeting between itself, MoF and NGR. It noted that the purpose of the meeting was to review its forestry plans for the Melvin Creek drainage, and to discuss the approach to co-ordinating those plans with any future resort development. At the meeting, Ainsworth

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had explained how the harvest plan proposal was generally consistent with NGR's development proposal, and confirmed that the first 5 km of mainline road had been engineered to be consistent with the proposed ski hill access road alignment. Ainsworth committed that, should the resort development be approved, it would work with NGR to ensure future work on site-specific prescriptions was consistent with the planned resource use, and that it would consider any site-specific concerns of the reviewing agencies in those prescriptions. Ainsworth noted, however, that it was not prepared to make any commitments on site-specific issues without having the detailed field information required to evaluate those decisions. Finally, Ainsworth noted that any future work depended upon whether the resort development is approved. Ainsworth stated that it will continue to work with NGR to develop the drainage once the resort is approved and the timber resource is secured.

In its May 8, 2000 letter to Ainsworth, MoF indicated that its determination on Ainsworth's 2000 FDP (which is the same as the 1998 FDP amendment for Melvin Creek, submitted April 21, 1999) would be postponed, pending completion of the EA process, since it would be premature to judge the outcome of the EA review. MoF intends to await the EA certification decision to take it into account when making its FDP determination. Other points discussed between MoF, Ainsworth and NGR at their April 18, 2000 meeting were outlined in the letter. MoF indicated that these points would be considered as part of the FDP determination, and included:

- *Block layout* - Ainsworth has committed to working with NGR, post-EA certification, to develop mutually agreeable plans. Items to be resolved include stem retention outside development areas, maintenance of streamside reserves, and clearing of ski runs and glading areas.
- *Hydrological concerns and mature forest removal* - Addressed as indicated in NGR's April 26, 2000 letter (see above).
- *FDP and Silviculture Prescription (SP) approval* - A determination on the 2000 FDP will be made prior to July 29, 2000. Many concerns are site-specific, and would not be considered in an FDP determination. SPs would also require approval, and would be the appropriate planning level for considering site-specific input. These SPs could also be referred to concerned agencies for comment.

In further correspondence with the EA Office in May, 2000, MoF confirmed its perspective of the potential timing of any logging-related activity by Ainsworth. MoF must first make a decision on Ainsworth's application for a FDP approval and this decision will not be made until after the EA certification decision on the resort proposal. If the FDP is approved, Ainsworth must still submit applications for approval of silviculture plans and cutting permit issuance before logging can commence. Separately, a road permit is needed to begin road construction. While a road permit could be issued in time for road construction work to commence in the fall of 2000, realistically, all approvals could not be in place for logging before the summer of 2001. MoF also reiterated that MoF's District Manager will consider the project committee's recommendations report and NGR's relevant EA commitments prior to making any decisions on Ainsworth's application to log the Melvin Creek valley.

In its June 21, 2000 correspondence, MELP indicated that it was satisfied that the parties involved in the logging issue were following a reasonable approach for addressing the issue. Furthermore, MELP indicated that it found this approach acceptable, provided that MELP will be involved in the forthcoming FDP review process for logging and ski hill area clearing.

With respect to the implications of additional logging activity for avalanche potential along the resort's proposed access road, MoTH reported on May 2, 2000 that it had discussed the matter with MoF. It has been agreed that MoTH will review Ainsworth's FDP application at the Silvicultural Prescriptions stage, and will recommend any adjustments to the logging plan which are needed to ensure that logging will not negatively impact avalanche hazard levels along the road.

Public Comments on Issue and Project Committee's Position (6.3.1)

1. PUBLIC COMMENT:

Timber harvesting would cause less/more damage than resort development.

PROJECT COMMITTEE POSITION:

Extensive logging of the Melvin Creek drainage is planned by Ainsworth, so that an 'either/or' situation is not anticipated in this case. NGR and Ainsworth have collaborated to ensure that logging will be compatible with preserving the resort development option – see this section for further discussion. In any case, the EA process is not a land use planning mechanism through which to make choices between alternative land use options. That is the role of planning processes such as LRMP processes or higher-level planning under the *Forest Practices Code*. The EA process is a project-specific review mechanism, intended to determine whether or not a proponent's development plans can be implemented in such a manner as to reduce any potential adverse effects to acceptable levels. Thus, the project committee is not comparing (and choosing between) the impacts of Ainsworth's overall logging plans and those of resort development, although these logging plans have been taken into account in the more generalised context of the resort project's cumulative environmental effects – see section 6.2.4. Based on the EA review of the project, the project committee is satisfied that potential adverse effects of the resort project are manageable – see, for example, discussion of wildlife effects in the various subsections of section 6.2.3.2 (*Wildlife Resources*).

The project committee notes that more or less temporary resource activities such as logging, while reducing the usefulness of habitats for some wildlife species (often on a temporary basis only), may have the effect of enhancing conditions for other species. The construction of more or less permanent facilities for housing and infrastructure typically eliminates the usefulness of those areas for larger species of wildlife, and/or sets up human/wildlife conflicts which have the potential to lead to displacement of animals from the area around the facilities, unless carefully mitigated. Wildlife impacts associated with permanent facilities tend to be significant and long-term in nature. The project committee has devoted considerable attention to efforts to ensure that environmental impacts are minimized, should the resort project proceed.

2. PUBLIC COMMENT:

The project will alienate areas from logging. Will Ainsworth's reduced cut in Melvin Creek be replaced in other drainages?

PROJECT COMMITTEE POSITION:

No decision has been made to maintain or reduce the cut at this time. The Chief Forester (CF) considers changes in land use arising from finalized land-use decisions when determining the annual allowable cut (AAC) for a Timber Supply Area (TSA) (Note - in the Lillooet TSA, the Melvin Creek drainage is only a small part). The CF considers not only environmental, but also economic and social, factors, when determining the AAC. The CF will consider the risk to timber supply if the resort lands are about to be removed from the timber harvesting land base. However, at the time of the next AAC determination, if the area has been designated for some use other than timber harvesting, then the CF can account for the removal of the area by considering the timber supply forecasts, which may or may not indicate that it is necessary to reduce the overall AAC in the TSA (establishment of the Stein Park was a good example of where this occurred). In the event of an AAC reduction, the reduced harvest level is always proportionately spread among all of the licences in the TSA (per section 63(4) of the Forest Act). MoF would not 'direct' a licensee to another area, since licensees propose their harvesting locations throughout a TSA by submitting Forest Development Plans (FDP) to MoF's District Manager for possible approval. These FDPs are created in accordance with the licence and the statutes pertaining to them.

First Nations Comments on Issue and Project Committee's Position (6.3.1)

No specific comments on impacts on forest resources were provided in the First Nations studies which were submitted on March 28, 2000.

Note – Those studies were considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.3.1)

The proponent has committed to:

- continue to work with MoF and Ainsworth Lumber in the post-EA period to ensure that an appropriate logging plan can be developed that is compatible with future tourism use;
- refrain from harvesting immature timber unless absolutely necessary;
- undertake no clear-cutting, beyond that which is provided for in the conceptual resort master plan, unless plans are prepared and provided to the satisfaction of the RM-FWH;
- leave a feathered wind-firm edge inside the area shown on the conceptual plan, when logging near the edge of riparian areas and ski runs;
- ensure that the new bridge constructed to replace the temporary bridge across Cayoosh Creek is in compliance with the *Navigable Waters Protection Act*;
- in keeping with the overriding public safety requirements of BCAL and the proponent's need to build a conventional ski resort with defined, forested ski trails,

minimize the loss of timber in constructing ski runs, so as to leave as much mature timber as possible, and glade ski runs;

- seek approval for logging only in areas shown on the conceptual master plan as commercial core, residential development, road, skiway or ski run above 1500 m;
- prepare and provide plans for logging of areas in addition to those shown on the conceptual master plan to the satisfaction of the RM-FWH;
- for clearing required for project development, prepare and provide to the satisfaction of the RM-FWH plans for any clearing of areas greater than 0.25 ha in addition to that provided for in the conceptual master plan. (Note - Smaller areas could be cleared with the approval of the environmental monitor, if no alternative exists;
- undertake no logging within the riparian buffer, per the *Urban Land Development Guidelines*, until the ski area master plan has been accepted under the CASP process; and,
- adhere to mitigation measures required to protect wildlife (i.e. timing windows, protection of special habitat features identified during Harlequin Duck or Spotted Owl inventories, etc.).

Status of Issue at Time of Referral to Ministers (6.3.1)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Forestry* - NGR has committed to continue working with Ainsworth Lumber Co. Ltd. and MoF on logging plans in the Melvin Creek drainage to address forestry issues. NGR has reached an understanding with Ainsworth which will ensure that logging can proceed in a manner compatible with both resort development needs and related environmental management objectives, as well as meeting Ainsworth's timber recovery goals.

6.3.2 MINERAL RESOURCES

Issue(s) (6.3.2)

Three issues were identified regarding mineral resources, including:

- possible implications of the proposed resort's proximity to an existing permitted granite quarry;
- potential effects on existing mineral claims to the west of the proposed resort development, including implications for potential future exploration activities; and
- the environmental implications of arsenic and molybdenum mineralization in the Melvin Creek drainage.

Note - Mineral programming was housed in MEI when NGR's application was filed, but is now housed in MEM, effective February 1998. In considering the resort proposal, MEM is now the lead agency for mineral resource issues for EA review purposes.

Content of Application (6.3.2)

A report entitled *Cayoosh Resort Feasibility Study* (1991; rev. 1996), prepared by Ecosign Mountain Resort Planners Ltd., was included in section 3 of NGR's application. The report provided a brief overview of the land uses which exist within the 'land area' defined by the 1996 Interim Agreement concluded between the province and NGR under the CASP process. The report noted that there was no evidence of past mineral exploration in the land area, and no active mineral claims identified, although an existing License of Occupation for quarrying building stone was held by Northwest Granite Co. Ltd. within the land area. NGR noted that, due to proximity to Duffey Lake Road, the quarrying activities would not conflict with the ski development. The report noted that three map reserves held by BC Parks, MoTH and MoF were located within the land area, but no potential conflicts with resort development were identified.

Agency Review Comments on Application (6.3.2)

MEI, in a letter dated February 25, 1997, commented on mineral resources issues associated with the proposed resort. It noted that a 'No Staking Reserve' (NSR) covered the main Melvin Creek drainage and the area proposed for the ski resort, and that the NSR was significantly smaller than the land area defined in the CASP Interim Agreement. MEI requested that the land area defined for the resort proposal be reduced to more accurately reflect that actually needed for resort development.

MEI requested that the granite quarry be excluded from the land area defined in the Interim Agreement. Although the quarry was not operating at that time, MEI wanted NGR to appreciate that the quarry was an existing, permitted development which could resume operations in the future.

It was also pointed out that at least four mineral claims abutted or slightly overlapped the western side of the land area defined for the resort proposal. MEI requested that the land area be adjusted to exclude these mineral claims.

MEI also noted that an area of molybdenum mineralization occurs to the southeast of Melvin Lake, within the proposed resort area. It explained that this type of mineralization was often associated with high levels of arsenic in rock samples and that this could become a health issue if surface or groundwater was considered for human consumption. MEI suggested that water sampling be undertaken to investigate the presence of arsenic and other contaminants associated with this type of mineralization.

Proponent's Responses to Agency Comments on Application (6.3.2)

In its letter of May 12, 1997, NGR responded to the concerns expressed by MEI with respect to mineral resources. NGR acknowledged that it was aware of the granite quarry, and noted that quarry operations would not conflict with the proposed resort development. Regarding the land area defined for the resort, NGR agreed that the boundaries could possibly be reduced slightly after the road location has been finalized, and the ski area master plan had been approved during the post-EA CASP review process. NGR acknowledged that mining and exploration may be proposed in adjacent areas in the future, but noted that road access through Melvin Creek to serve those activities would conflict with resort operations. Regarding possible arsenic and

molybdenum concerns, NGR stated that initial water sampling had not identified water quality problems, and that further sampling would be undertaken during project review.

Project Report Specifications (6.3.2)

NGR had addressed identified issues to the satisfaction of MEI for EA review purposes. Thus there were no further reporting requirements of NGR in the specifications.

Issue Treatment in Proponent's Project Report (6.3.2)

NGR noted that it was concerned with the possibility of mining operations being accessed through the resort. In order to address this, NGR applied to extend the NSR to include a small area south and west of Upper Twin Lake. This proposed extension was intended to ensure that the NSR encompasses the entire project development site.

Agency Review Comments on Project Report (6.3.2)

A September 8, 1999 letter from MEM commented further on mineral resource issues raised by the proposed resort. The mineral claims which previously overlapped the west side of the project area were identified as having lapsed, but MEM anticipated that mineral exploration and development would likely occur in the area in the future. MEM stressed the need to recognise the potential for future mineral exploration and development in the area surrounding the resort proposal, and requested NGR to confirm that it foresaw no conflict between these activities and resort operations.

Proponent's Responses to Agency Comments on Project Report (6.3.2)

In its October 26, 1999 response to MEM, NGR confirmed that it was aware of the granite quarry and that foresaw no conflicts between resort development and potential mineral activities in the lower valley. With respect to any future mineral exploration or development in adjacent areas outside the NSR, NGR was unwilling to confirm that there would be no conflicts with resort development. NGR was particularly concerned with the potential impacts on regional wildlife populations of mineral resource development in adjacent valleys. NGR will be required to conduct ongoing wildlife monitoring if the resort proceeds, and to modify operations if significant impacts are identified. If mineral development activities in adjacent valleys impact the same wildlife populations, this could create serious complications for the resort. NGR suggested that it should discuss this issue further with MEM and MELP.

Follow-up Exchanges (6.3.2)

MEM responded on May 9, 2000 that any discussions at this point would be speculative, and therefore, inconclusive. While mineral exploration would not be expected to have significant wildlife effects, mining activities could cause more significant impacts, depending on the exact circumstances of the mining proposal in question. If a significant mining operation is proposed, it would be subject to the EA process, and its incremental and cumulative wildlife effects would have to be assessed, taking account of the existing status of wildlife populations and habitats.

In subsequent discussions with EAO, NGR expressed continued concern with the future potential for individuals/companies to attempt to obtain access through the resort to explore or develop resources outside of the NSR. In response to this concern, MEM reiterated its confidence that an environmental assessment of any proposed mine in the

vicinity of the resort would likely not approve industrial access through the resort. As well, MEM noted that there may be some potential to use the *Mineral Tenure Act* to prohibit future industrial mining access through the NSR. This would require an amendment to the existing NSR to include a condition that prohibits mine access through it. MEM noted that this option could potentially provide a legal solution to NGR's concern, but would likely not be necessary, since in practice, this type of access would probably not be approved.

Public Comments on Issue and Project Committee's Position (6.3.2)

Members of the public provided no specific comments with respect to mineral resource issues.

First Nations Comments on Issue and Project Committee's Position (6.3.2)

No specific comments on resort impacts on mineral resources were provided in the First Nations studies submitted on March 28, 2000.

Note – Some of those studies are considered drafts – it is possible that input may be provided in revised versions of the reports.

Proponent's Commitments Relevant to Issue (6.3.2)

In order to further address mineral resource issues, NGR committed to:

- apply to BCAL to arrange for renewal of the temporary 'No Staking Reserve' currently placed over the Melvin Creek drainage on a permanent basis;
- raise no objections to renewed operations at the existing granite quarry of Northwest Granite Co. Ltd;
- raise no objection to future mineral exploration and mining activities in the lower Melvin Creek valley; and
- in general, recognise that the area outside of the "No Staking Reserve" is open to other resource development, subject to decisions made, and conditions imposed, by government through the appropriate review processes, which will take into account existing uses and prior rights, and which will recognise that access to other resource development would not pass through the "No-Staking Reserve".

Status of Issue at Time of Referral to Ministers (6.3.2)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Mineral resources* - With respect to mineral resources, NGR has made acceptable commitments which will avoid any unnecessary sterilisation of mineral development potential by: (1) ensuring that resort operations will not conflict with an existing permitted granite quarry, and (2) recognising that mineral exploration and mining activities may be carried out on lands adjacent to the resort.

6.3.3 RECREATION AND TOURISM EFFECTS

Issue(s) (6.3.3)

Several issues were identified with respect to recreation and tourism on-site and adjacent to the proposed resort, including:

- identification of existing tourism and recreational use in the Melvin Creek valley and adjacent area;
- documentation of the major tourism products associated with the resort;
- the role of the resort within the context of the local and regional tourism sector;
- potential impacts on existing recreation/tourism uses and appropriate mitigation measures; and
- identification of additional recreation and tourism opportunities associated with resort development.

Content of Application (6.3.3)

The potential impacts of the proposed resort development on existing recreation and tourism activities were not addressed in any depth in the application.

Agency Review Comments on Application (6.3.3)

In its March 6, 1997 letter, MSBTC identified several tourism-related issues which needed to be addressed. These issues included the need to: (1) identify all existing on-site and adjacent tourism and recreation use; (2) describe the resources important to tourism and recreation; (3) assess the positive and negative impacts of all stages of resort development on existing tourism and recreation activities and the resource base; (4) outline all associated recreation/tourism activities proposed for the resort, including the range of proposed summer tourism products and possible golf course development; (5) indicate how these products relate to existing and potential tourism operations; and (6) where necessary, describe efforts to avoid or mitigate negative impacts.

MSBTC also requested that NGR update market study information to include information on new and emerging BC destination resorts and their potential to impact on the project.

MELP raised concerns with respect to this issue in its February 24, 1997 correspondence, noting that its specific comments regarding recreation and wilderness were more appropriately a responsibility of MSBTC. MELP noted some concern over the anticipated additional pressure on nearby provincial parks, due to increased traffic in the vicinity of the proposed resort. MELP was also concerned over the negative impacts on wilderness values resulting from locating the resort in the centre of a previously undisturbed and inaccessible area.

In its March 4, 1997 letter, Whistler requested that NGR address the potential socio-economic impacts of resort development on Whistler. Information was requested with respect to impacts on businesses, tourism operators, employment/workforce, effects on Whistler visitations and local housing prices.

Proponent's Responses to Agency Comments on Application (6.3.3)

NGR responded to the concerns raised by MSBTC in a May 5, 1997 letter. Regarding on-site and adjacent tourism use, NGR noted that one guide/outfitter made use of the immediate area and, more generally, bus tours utilised the Duffey Lake corridor for various tourism operations. With respect to resources which are important to tourism, such as scenic quality, wildlife habitat and water quality, NGR noted that those issues had been addressed in separate sections of its application, and in supplementary information supplied for the EA review.

NGR argued that, although there were numerous tourism operators in neighbouring communities, the proposed resort would not negatively impact any of those operators. Rather, the resort would attract new visitors to the region, strengthening the regional tourism product in both winter and summer seasons. The resort's visual impacts would be minimal, since the only aspect of the proposed resort to be visible from the Duffey Lake Road would be the first few kilometres of the access road. Areas disturbed by access road construction would be revegetated to further minimize any visual impacts.

NGR stated that the range of activities proposed for the resort had been outlined in the application. It would offer snow sports (alpine and cross-country skiing, snowboarding) in the winter, as well as summer activities such as sightseeing, hiking, biking, tennis, golf and swimming. NGR indicated that the impacts of the resort on existing and potential tourism operators were difficult for NGR to assess. Current operators in Pemberton and Lillooet had shown strong support for the resort, while Whistler had expressed a somewhat more cautious view.

NGR responded to Whistler's comments in an April 23, 1997 letter, which provided an overview of the anticipated effects of the proposed resort development on Whistler. NGR noted that the Whistler/Blackcomb resort would soon be reaching its planned maximum size, and pressure to continue development would remain strong. That pressure, suggested NGR, could be refocused towards the Melvin Creek/Cayoosh resort. By providing a more remote, smaller village in a sunnier and drier location, the Melvin Creek/Cayoosh project would enhance the region's destination visitor attractions, and complement Whistler's business and residential communities.

NGR outlined the competition faced by Whistler in the North American winter destination market, and suggested that a new regional resort offering a different ski product would assist the Whistler region. The Melvin Creek/Cayoosh resort would be seen as an additional attraction to the Whistler region, especially for destination markets. Based on previous North American experience (e.g. in Colorado), the proposed resort would bring new or lost Whistler market share to the Sea to Sky region. Any net loss of Whistler skiers to the new resort would be more than offset by the increase in those who see the new resort as an attractive reason to revisit the Whistler region. NGR maintained that any net loss of Whistler skiers in the regional markets would be offset by increases from the destination markets.

NGR further noted that the proposed resort would provide many Whistler businesses with increased opportunities. Tourism industry operators could bring their expertise to the new resort, and thereby expand their operations. Moreover, the development of the

proposed resort would provide construction and development opportunities coinciding with the slow-down in growth at Whistler. Finally, NGR identified the likely impacts on local communities from the increased demand for employee housing. Due to cost factors, NGR noted that demand for housing in Whistler would likely be unaffected, while the demand in Lillooet and Pemberton would increase.

On May 12, 1997, NGR provided a response to the concerns expressed by MELP (BC Parks). NGR stated that most Melvin Creek/Cayoosh resort visitors were not likely to enter adjacent parks and recreation areas in large numbers. NGR described the expected type of summer visitor as being more interested in a relaxing escape than arduous hiking experiences. Generally, NGR expected that visitors would remain in the valley and in the vicinity of the base development. NGR noted that a small number of winter visitors may ski out of bounds into adjacent backcountry areas, but that this would be limited, due to the steep and dangerous access into most of the adjacent valleys. Overall, NGR predicted that the impacts would be negligible in the winter months, and predominantly limited to roadside facilities and viewing areas in the summer months.

NGR also discussed the possibility that increased access would impact local wilderness areas. Due to potential conflicts with wildlife, NGR suggested that a trail and access system from and within the Melvin Creek valley must be developed following extensive wildlife review. NGR further proposed to limit hiking access within and outside Melvin Creek to those areas where wildlife impacts would be minimized.

In a letter dated May 12, 1997, NGR responded to comments made in the Spring 1997 issue of the *BC Environmental Report*. NGR took exception with some of the statements made in the article and, in doing so, provided further information to the EA review process. Countering the claim made in the article regarding the high use of the area by backcountry users, NGR noted that it had encountered little evidence of recreational use of Melvin Creek other than some limited hunting. NGR noted that Melvin Creek is very inaccessible, and is not used by weekend recreationists from the Lower Mainland.

Project Report Specifications (6.3.3)

NGR was required to identify and characterise existing tourism and recreation use and opportunities in, and adjacent to, the proposed project site (E.2(A)#1). NGR was also required to assess the impacts of resort development on existing tourism and recreation uses and opportunities, including project benefits and the additional opportunities created, including additional four-season products (E.2(A)#2).

Issue Treatment in Proponent's Project Report (6.3.3)

In Volume 2, section E of the project report, NGR addressed recreation and tourism issues and included a 1999 report by Cascade Environmental Resource Group, entitled *Recreation Use and Opportunity in Melvin Creek and Area, Duffey Lake Corridor*. The report summarized the existing recreation and tourism uses of the Melvin Creek valley and the Duffey Lake corridor, and identified areas considered to have the setting and attributes appropriate to certain recreational activities or experiences. The assembled information was used to describe how the proposed resort might change recreation use patterns and opportunities in the area. The report identified low rates of use in the Melvin Creek valley, and noted that activities in adjacent areas were not highly

dependent upon this valley, and would not be significantly affected by the development of a ski resort. The report concluded that the development of a ski resort in the Melvin Creek valley would broaden and diversify recreational opportunities in the area, without significantly affecting existing patterns of use. NGR has committed to plan both the infrastructure (e.g. ski lifts) and recreation activities with consideration given to minimising impacts on both wildlife and neighbouring recreation uses.

NGR also outlined the results of a regional recreation study undertaken by the GVRD Parks Department in 1995. This report indicated that recreation demand would outstrip current park and outdoor recreation supply, due to growth in recreation activities and population, capacity limits of existing recreation facilities, and limited funding. NGR noted that the proposed resort would be compatible with future trends in recreation along the Sea to Sky corridor. The proposed resort would develop a wide range of winter and summer activities to address the growing demand for recreational activities, without impacting on the funds available for public parks and recreation sites.

In order to assess the level of support for the proposed resort amongst the regional tourism business community, NGR conducted a survey of most Chamber of Commerce members from Whistler to Lillooet. More than 95% of the respondents indicated that they believed the Sea to Sky corridor would benefit from the proposed resort.

Agency Review Comments on Project Report (6.3.3)

In a June 27, 1997 letter, Whistler indicated that it was satisfied that its concerns had been addressed by NGR, and that it supported the proposed development.

In its October 14, 1999 correspondence, MSBTC commented that NGR's submission met the requirements of the specifications for this issue, and that the reporting provided a clear and comprehensive assessment of the tourism and recreational impacts of the proposed resort.

During the public comment period, a significant number of respondents raised concerns with the potential recreation and tourism effects of the resort. The majority of these concerns focussed on the anticipated negative impacts on adjacent valleys resulting from resort development. There was concern that the resort would provide improved access into adjacent valleys, resulting in a large influx of recreational users (motorised and non-motorised) into adjacent valleys. This increased recreational use of adjacent areas would in turn negatively impact the wildlife populations, as well as the 'wilderness' experience of current recreational users of these areas.

Proponent's Responses to Agency Comments on Project Report (6.3.3)

On December 9, 1999, NGR provided a summary response to the public input and comment submitted regarding recreation and tourism impacts. Regarding the potential impacts on backcountry recreation opportunities, NGR noted that it fully supported the protection of wilderness and backcountry recreation opportunities in valleys adjacent to the proposed resort, as well as the restriction of commercial and recreational real estate development along the Lillooet to Pemberton corridor. NGR also stated that, with appropriate controls in place, the considerable backcountry recreational opportunities currently available would be maintained. NGR further explained that the 2,835-ha

Melvin Creek drainage represented less than 1% of the 200,000+ ha of undeveloped land in the Duffey Lake corridor and Cayoosh Range. In addition, NGR stressed that helicopter-based recreation would not be a part of the development.

Follow-up Exchanges (6.3.3)

In its March 20, 2000 correspondence, NGR provided an updated *Cayoosh Summer Visitor Profile*. This letter report was submitted in response to concerns raised by DFO with respect to potential cumulative impacts on wildlife from increased recreational use of adjacent valleys associated with resort development (refer to sections 6.2.4 - *Cumulative Environmental Effects* and 6.2.3.2.3 - *Grizzly Bears* - for further discussion of this issue). The report confirmed NGR's earlier position that, due to various factors, the resort development would have only a minor effect on the recreational use of adjacent valleys. In its March 22, 2000 correspondence, MSBTC noted that the analysis and results of the report were reasonable, and that, by working with MELP to identify optimal trail locations and demonstrating that the resort would not demand intensive summer use of the alpine, NGR had adequately addressed the EA-level recreational access concerns.

In the context of concerns over grizzly bear impacts, on May 9, 2000, NGR also provided a report containing additional estimates of both winter and summer visitors and workforce size, and included comments on likely recreational preferences – see section 6.2.3.2.3 - *Grizzly Bears* for outline. MSBTC's May 10, 2000 comments on the report confirm its concurrence that the project is predicated on a low-key summer product, similar to that offered by the Sun Peaks resort. MSBTC agrees that tour busses and conventions are most likely to bring summer visitors. The resort will offer little to attract independent summer hikers and other backcountry travellers away from the Joffre Lakes and Cerise areas.

The potential cumulative impacts of increased recreational use of backcountry areas adjacent to the proposed resort, particularly with respect to impacts to grizzly bears, are documented in further detail in sections 6.2.3.2.3 - *Grizzly Bears* and 6.2.4 - *Cumulative Effects*, and that discussion is not repeated here.

Public Comments on Issue and Project Committee's Position (6.3.3)

1. PUBLIC COMMENT:

The resort will have significant negative impacts on existing backcountry recreational activities both within the Melvin Creek drainage and in adjacent areas.

PROJECT COMMITTEE POSITION:

As indicated in NGR's submissions, the proposed development will directly affect recreational use and settings in the Melvin Creek valley. However, current recreational use of the valley is very low, because of the difficulty in gaining entry, so that little disruption of past user patterns is expected within the valley if the project proceeds. It is also worth noting that, even without resort development, road access may be created into the valley if Ainsworth proceeds with plans to log the valley, so that some change in use patterns seems likely. The project committee believes that the resort will have at most a limited incremental effect on recreational use and settings in adjacent valleys. While the potential for significant external impacts from

recreational activities originating at the resort was recognised early in the EA review, if the project proceeds, various measures will be taken to contain recreational activities within the confines of the Melvin Creek valley. A modest number of resort visitors and employees may visit adjacent drainages, primarily in summer. At the same time, logging and other activities in adjacent valleys are already leading to increased recreational access and use levels. Except in a cumulative effects context – see section 6.3.4 - the impacts of these activities are beyond the scope of this assessment. The Lillooet LRMP planning table is considering land use measures over a broad area to address concerns raised by the current growth in outdoor recreation activity in the area. The planning table is planning for both 'resort' and 'no resort' scenarios. Measures implemented through the final approved LRMP plan are expected to complement measures proposed by NGR to minimize its impacts on surrounding areas. The committee believes that NGR has adequately addressed this issue – see this section.

2. PUBLIC COMMENT:

Need to consider impacts of the resort on wilderness values. The Duffey Lake corridor is an important wilderness destination.

PROJECT COMMITTEE POSITION:

As noted in response to comment #1, if the resort proceeds, measures are proposed to minimize the spill-over effects of the project into surrounding areas. The project committee is satisfied that NGR, through these measures, is making a reasonable contribution to addressing this issue. However, the responsibility for managing wilderness values more generally in the Duffey Lake corridor rests with provincial resource management agencies such as MoF, MELP and BCAL. It is possible that resort visitors and workers will add modestly to the growing recreational use of adjacent drainages. It is also possible that commercial recreation initiatives, motivated by the presence of the resort, but not corporately linked to it, will seek approval to site themselves in the corridor. It is largely beyond NGR's ability to control such trends. Provincial agencies will need to pursue strategies such as more controlled public use of recreation access and careful scrutiny of commercial recreation applications, and will rely on the Lillooet LRMP process and other resource planning and management initiatives to provide overall direction. Such initiatives are largely beyond the scope of the EA process, but the project committee has been aware of them in considering recreational resource impacts. The role of provincial agencies in managing backcountry recreational use in surrounding areas is discussed in more detail in section 6.2.3.2.3 (*Grizzly Bears*).

3. PUBLIC COMMENT:

Resort development will alter recreational settings and opportunities in and around the project area. Can activities and settings in surrounding areas be protected?

PROJECT COMMITTEE POSITION:

With respect to the potential for the resort to alter recreational settings/opportunities, see response to comment #1 and this section. Protection of recreational settings and opportunities in areas adjacent to the proposed resort can be achieved through a combination of: (1) measures implemented by the resort operator to contain resort

activities within the Melvin Creek drainage; and (2) provincial government initiatives such as the Lillooet LRMP process, forest land planning and the establishment of protected or specially managed areas – see also response to comment #2.

4. PUBLIC COMMENT:

Resort development will restrict general purpose public access to backcountry areas.

PROJECT COMMITTEE POSITION:

As indicated in NGR's reporting, the proposed development will directly affect recreational use and settings in the Melvin Creek valley, and will place some restriction on public access to areas within the resort's Controlled Recreation Area. At the same time, the valley has experienced very little recreational use in the past, because of the topographic constraints on backcountry access, so little disruption of past user patterns is expected within the valley. Outside Melvin Creek, the operating needs of the resort will not necessitate any special controls being placed on public access to adjacent areas. NGR has indicated that it can support for any land use designations which the Lillooet LRMP may propose for surrounding areas – it is not seeking any particular land use regime as part of the resort's operational needs. In terms of the resort's indirect effects, as noted in response to comment #1, the project committee has determined that the resort will have at most a limited incremental effect on recreational use and settings in adjacent valleys. However, the resort, if it proceeds, will add to existing wildlife management concerns (e.g. for grizzly bears) which are already prompting consideration of controlled public use of recreational access in surrounding areas (e.g. installed for logging purposes) by the Lillooet LRMP process. With regard to such issues, see response to comment #2.

5. PUBLIC COMMENT:

Using the Recreation Opportunities System (ROS) system to classify recreational settings does not adequately characterise the existing situation. Need to address quality of wilderness experience (e.g. identify adjacent routes/trails, talk to user clubs, etc.).

PROJECT COMMITTEE POSITION:

ROS is the methodology used by MoF for inventory and planning of recreation on non-park Crown land. Use of ROS in the project report ensures compatibility between this assessment and other work by MoF. NGR did augment the ROS work with interviews and anecdotes from user groups. The project committee is satisfied that NGR has adequately addressed this issue.

6. PUBLIC COMMENT:

Need to restrict hiking/biking access in certain areas to avoid impacts on adjacent valleys.

PROJECT COMMITTEE POSITION:

The project committee agrees with this comment. NGR has adjusted the locations of trails and lifts to avoid potential impacts on wildlife habitat and sensitive vegetation, and to minimize opportunities for people to enter adjacent areas by going out of bounds from the resort. The resort's detailed trail plans and mountain bike use

proposals will have to be approved by MELP during the permitting stage, if the project is granted an EA certificate – see NGR's commitments in section 6.2.3.2.1 (*Wildlife Resources – General*).

7. PUBLIC COMMENT:

Need to address potential effects of motorised recreational vehicles (e.g. ATVs, snowmobiles).

PROJECT COMMITTEE POSITION:

NGR has committed that snowmobiles and ATVs will not be permitted in the project area – see NGR's commitments in section 6.2.3.2.1 (*Wildlife Resources – General*).

8. PUBLIC COMMENT:

Concerned that the proposed resort could divert summer bus tours from Lillooet.

PROJECT COMMITTEE POSITION:

The project committee is satisfied with NGR's assessment that, by targeting the destination ski market and bringing new tourists into the area, rather than simply competing for existing visitors, the resort will attract more bus traffic to the area in the summer. Lillooet's own economic assessments concur with this expectation.

9. PUBLIC COMMENT:

The resort will improve tourism and recreation opportunities for the local area.

PROJECT COMMITTEE POSITION:

Overall, the project committee has concluded that the resort will add to the tourism and recreation opportunities in the local area and region. However, as noted in the responses to comments #1 and #2, impact concerns were identified in surrounding backcountry areas. These are to be addressed through a combination of (1) measures implemented by NGR to contain within Melvin Creek the effects of recreational activities actually undertaken at the resort and (2) actions by provincial resource agencies to increase the level of management of recreational activities in adjacent areas.

10. PUBLIC COMMENT:

Object to any exploitation of Twin Lakes, since it is a unique backcountry destination.

PROJECT COMMITTEE POSITION:

The project committee was satisfied that NGR has adequately documented the character and current use of the Twin Lakes area, and the effects of the proposed development. Based on NGR's analysis of recreational land use and earlier surveys of recreational resources, the project committee is satisfied that the development of the resort and the resulting change in recreational character within the resort area will not have a significant effect on opportunities for backcountry recreation in the area.

11. PUBLIC COMMENT:

If the project is approved, NGR should conduct an evaluation of the impact of large resorts on backcountry recreational use.

PROJECT COMMITTEE POSITION:

Experience at other resorts has been explored during this EA review in those situations where it was thought to be helpful. For example, in examining the effects of resort visitors and workers on surrounding wildlife and recreational values, NGR has reported on experience at other resorts such as Sun Peaks, Lake Louise and Whistler/Blackcomb. While there may be merit in a broader study of resorts and their effect on backcountry recreation, such a study is beyond the scope of this assessment and NGR's reporting responsibilities for this project.

12. PUBLIC COMMENT:

A moratorium should be placed on issuing licenses or granting leases for all areas within helicopter or snowmobile range of Melvin Creek.

PROJECT COMMITTEE POSITION:

If it proceeds, the resort itself will not be permitted to function as a base for helicopter-based recreation activities. Moreover, NGR has committed that use of snowmobiles will not be permitted in the resort area. More generally, tenure applications for commercial recreation are handled under the province's Commercial Recreation policy, which is administered by BCAL. During the EA review, the possibility was recognised that one of the resort's indirect effects might be to encourage commercial recreation initiatives, motivated by the presence of the resort, but not corporately linked to it, to seek approval to site themselves nearby. If not properly controlled, such ventures could have adverse effects on both recreational and wildlife values in surrounding areas. BCAL has advised the project committee of its position in this matter: (1) BCAL is working closely with the Lillooet LRMP initiative, and is committed to implementing the plan once approved by Cabinet, having already endorsed many of the draft objectives with respect to wildlife and recreational values; (2) if BCAL receives applications for Commercial Recreation tenures in areas of recreational or wildlife concern, then depending on the nature and scope of proposals, applications may require tailored environmental assessments, including cumulative effects assessment; and (3) BCAL favours case-by-case review over a blanket moratorium approach to Commercial Recreation applications. BCAL currently has several Commercial Recreation applications under review, and anticipates an increasing ongoing demand for such activities in the area, with or without resort development.

First Nations Comments on Issue and Project Committee's Position (6.3.3)

A. Increased Recreational Use

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA Engineering.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The second section of the report evaluated, from the perspective of the St'at'imc communities, the transportation-related impacts of the resort development. Issues associated with the resort access road were included in the discussion

1. FIRST NATIONS ISSUE:

The report noted that although there is some current recreational use of the Melvin Creek area, the type and level of activity is limited by the lack of access. The report identified concern that the construction of road access into the Melvin Creek valley would increase the number of recreational users and types of recreational activities in the valley, and potentially in adjacent watersheds.

PROPONENT RESPONSE:

Only limited trail access is proposed to alpine areas and adjacent watersheds. No access trails would be provided to the Barkley valley or the Lost valley areas from Melvin Creek. It is also anticipated that no trails would be built into Downton Creek. Given the proposed use of signage, public education and a focus on specific internal trail destinations, the amount of recreational access to adjacent watersheds from the resort would be significantly curtailed. NGR supports provincial efforts to develop recreational zoning for the Duffey Lake and Cayoosh Range areas to assist in avoiding conflicts between recreation users and wildlife conservation objectives. It is anticipated that the Cayoosh Range itself will remain a wilderness backcountry area, thus limiting access to important wildlife areas. NGR also understands that, through the Lillooet LRMP, de-activation of the upper Downton Creek logging roads, and perhaps roads in other adjacent valleys also, is being discussed, which would limit access into the upper drainage of this valley. With these action steps, all of the valleys adjacent to Melvin Creek would have restrictions in terms of backcountry accessibility.

PROJECT COMMITTEE POSITION:

Referring first to NGR's response, NGR has commented on its understanding of some of the provisions which could be included in the final form of the Lillooet LRMP. At this point in time, with work still to be done to finalize the LRMP, it is not yet known whether or not the measures mentioned by NGR will be adopted in the plan. From an EA review perspective, the project committee recognises that the proposed resort would result in an increase in recreational activity in the Melvin Creek valley. However, it also appreciates that, if the project were not to proceed, road access into the valley, associated with anticipated logging activities, would likely also increase recreational use. The project committee believes that the resort will have at most a limited incremental effect on recreational use and settings in adjacent valleys. While the potential for significant external impacts from recreational activities originating at the resort was recognised early in the EA review, if the project proceeds, various measures will be taken to contain recreational activities within the confines of the Melvin Creek valley. A modest number of resort visitors, employees and residents

may visit adjacent drainages, primarily in summer. At the same time, logging and other activities in adjacent valleys are already leading to increased recreational access and use levels. Except in a cumulative effects context – see section 6.3.4 – the impacts of these activities are beyond the scope of this assessment. The Lillooet LRMP planning table is considering land use measures over a broad area to address concerns raised by the current growth in outdoor recreation activity in the area. The planning table is planning for both 'resort' and 'no resort' scenarios. Measures implemented through the final approved LRMP plan are expected to complement measures proposed by NGR to minimize its impacts on surrounding areas.

Provincial agencies will need to pursue strategies such as more controlled public use of recreation access and careful scrutiny of commercial recreation applications, and will rely on the Lillooet LRMP process and other resource planning and management initiatives (e.g. inter-agency memorandums of understanding) to provide overall direction.

Proponent's Commitments Relevant to Issue (6.3.3)

In order to further address recreation and tourism issues, NGR committed to:

- ensure that no access trails are built by the resort operators to provide access from the Melvin Creek valley into the Barkley Creek valley or the Lost Creek valley areas.
- ensure that no access trails are built by the resort operators to provide access from the Melvin Creek valley into the Downton Creek valley;
- review every upper terminal access road with BCAL and RM-FWH to agree on methods to minimize public access;
- prohibit public vehicle use of non-public roads (upper terminal access roads and communication tower service roads); and
- gate permanent upper terminal access roads.

Status of Issue at Time of Referral to Ministers (6.3.3)

The project committee considers the issue resolved for the purposes of EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Outdoor recreation* - Coupled with land use measures implemented by government (e.g. through the Lillooet LRMP or the grizzly bear MoU), the proposed design/layout of the resort and NGR's various commitments intended to limit the impact of the resort on surrounding areas will help to ensure that outdoor recreation and wilderness values in adjacent drainages are maintained, and that the resort will not have a significant adverse effect on recreational use of these valleys.

6.3.4 COMMERCIAL AND NON-COMMERCIAL FISH AND WILDLIFE RECREATION

Issue(s) (6.3.4)

The identified issues included the need to:

- assess the effects of project development and associated management measures on the operations of the local guide /outfitter and trapline holders; and
- identify proposals for mitigation and management of any impacts.

Content of Application (6.3.4)

Guiding and trapping activities were not substantively addressed in NGR's application. In section 3.4 of the application, NGR indicated that there was one guide/outfitter (Leo Ouellette), and one trapline currently registered in the project area. The frequency with which either tenure was used was not described.

Agency Review Comments on Application (6.3.4)

As described in section 6.3.3, MSBTC outlined its concerns with respect to tourism and recreation issues in a letter dated March 5, 1997. Included in that letter was a request for further information regarding existing guide/outfitting activities in the vicinity of the project site, an assessment of potential negative impacts to those activities, and proposed mitigation measures to address any impacts.

Proponent's Responses to Agency Comments on Application (6.3.4)

In its May 5, 1997 letter, NGR responded to the concerns outlined by MSBTC. NGR noted that the only current tourism use in or around the project site was that by the guide/outfitter, Mr. Ouellette. It was further suggested that if the project were approved, hunting would no longer be permitted in the area.

Project Report Specifications (6.3.4)

NGR was required to consult with the existing guide-outfitter and trapline holders in the Melvin Creek drainage, document any impacts identified and indicate the level of support or concern for the project (E2(B)#1 and #2).

Issue Treatment in Proponent's Project Report (6.3.4)

In Volume 2, section E of the project report, NGR addressed the specifications regarding commercial and non-commercial fish and wildlife recreation. With respect to the guide/outfitter, Mr. Leo Ouellette, NGR reported that he had been contacted on several occasions, most recently during an interview on April 20, 1998. At that time, Mr. Ouellette noted that the Melvin Creek drainage was only a small part of his large guiding territory, but was used, on average, for one 4-to-5-day hunt every year. NGR explained that Mr. Ouellette had understood the resort development would effectively eliminate his use of the Melvin Creek valley, but was agreeable, provided he would receive acceptable compensation.

Regarding the trapper, NGR noted that he was contacted on April 28, 1999, and responded by registered mail the following day. The trapper advised that Melvin Creek was the only unlogged watershed on his trapline, and that he believed it served as a dispersal area for animals he trapped elsewhere. NGR noted that, in general, the trapper did not support the resort proposal, due to concerns that it would impact Melvin Creek and adjacent areas of his trapline by reducing the number of animals available and increasing human activity.

NGR also provided additional information regarding First Nations claims to trapping rights in the Melvin Creek valley. An elder of the Lillooet Band, Mr. Ed Napoleon, had indicated that the trapping lines for the area belonged to him and his brother, but that these trapping rights were illegally awarded to others. The Mount Currie Band provided documents indicating that the Pemberton Band was awarded trapping rights in the vicinity of Melvin Creek in 1930. NGR concluded that there may be some overlapping trapping rights for the Melvin Lake area.

Agency Review Comments on Project Report (6.3.4)

MSBTC indicated in its October 14, 1999 correspondence that NGR had satisfactorily addressed the specifications regarding commercial and non-commercial fish and wildlife recreation.

MELP noted in its June 5, 2000 correspondence that its trapping licence records did not indicate that the Pemberton Band was awarded trapping rights in the vicinity of Melvin Creek in 1930. A trapping licence was registered to a First Nation individual, but not to the Pemberton Band. This licence was cancelled in 1977 due to lack of use of the trapping line. MELP noted that it has no evidence to support the claim that MoF revoked the trapline of an Elder's father. MoF does not have the authority to revoke trapline licences under the *Wildlife Act*. MELP has been made aware that the trapline registration was transferred to a new individual on December 13, 1999.

Subsequently, on June 22, 2000, MELP confirmed that it had located records of a trapline issued in the name of specified Pemberton Band members in 1933. It was eventually terminated in 1975.

The project committee is satisfied that NGR has committed to make reasonable efforts to negotiate a compensation agreement with the guide/outfitter. The project committee has received no representations from the new trapline tenureholder since he took over the tenure in December 1999.

Proponent's Responses to Agency Comments on Project Report (6.3.4)

Since no further concerns were raised, NGR provided no further comment regarding commercial and non-commercial fish and wildlife recreation.

Public Comments on Issue and Project Committee's Position (6.3.4)

1. PUBLIC COMMENT:

Opposed to hunting restrictions in the area (e.g. 'no hunting' zones) since it will curb recreational use.

PROJECT COMMITTEE POSITION:

In some respects, resort development will substantially increase recreational use of the area. Having said that, hunting restrictions inside a Controlled Recreation Area are a normal public safety requirement at a ski resort. Since, in Melvin Creek, historic levels of hunting have been low because of the need to negotiate difficult terrain to gain access to the area, there will be very little disruption of current patterns of hunting use. The project committee considers the issue to be of a non-strategic nature.

2. PUBLIC COMMENT:

Need for hunting restrictions within and adjacent to Melvin Creek valley.

PROJECT COMMITTEE POSITION:

The project committee agrees that some degree of hunting restriction will be needed in and around the resort site if the project proceeds. The project committee is satisfied that this is a routine permitting matter of a non-strategic nature which can be addressed by MELP, as the permitting agency, if the project receives an EA certificate.

First Nations Comments on Issue and Project Committee's Position (6.3.4)

A. Impacts on Species of Ethnozoological Significance to St'at'imc (Compton Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort – Cultural Heritage Study – Review of Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia*, dated March 2000, prepared by Brian D. Compton.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.

Project committee comments with respect to species which are of ethnobiological significance to the St'at'imc, according to the Compton report, are located elsewhere in this report as follows:

- Fish species – see section 6.2.3.1 – *Fisheries Resources*
- Wildlife species – general - see section 6.2.3.2.1 – *Wildlife Resources – General*
- Mountain goats – see section 6.2.3.2.2 – *Mountain Goats*
- Grizzly bears – see section 6.2.3.2.3 – *Grizzly Bears*
- Birdlife – see section 6.2.3.3 - *Birds*

B. Impacts on Traditional Use of Fish and Wildlife by First Nations (Creekside Study)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *Cultural Heritage Study Final Report*, dated March 24, 2000, and prepared by Sue Montgomery, Project Manager, St'at'imc Impact Assessment study.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it is considered incomplete by St'at'imc Chiefs, requires more research, and therefore is not approved by them.

A detailed summary of this report is included in section 6.6.1 (*First Nations Traditional Use*). The report indicates that a key component of St'at'imc traditional use of the Melvin Creek drainage entails hunting and fishing activities. Key points from that report which are relevant to this issue include the following:

- Based on ethnographic interviews completed to date, present-day use of Melvin Creek consist almost entirely of deer hunting. Other types of activities and facilities now or in the past, include:
 - trails;
 - hunting of deer goat, marmot and blue grouse;
 - hunter's cabin; and
 - trapping;
- A similar range of activities and facilities were reported in surrounding valleys also, including the Cayoosh, Downton, Lost, Haylmore, Barkley, Common Johnny, Blowdown, Boulder, Gott, Hurley Silver Mine valleys, and Duffey Lake:
 - trails;
 - deer, bear, marmot, blue grouse and goat hunting;
 - grizzly bear habitat;
 - deer migration route;
 - goat habitat;
 - hunters' and trappers' cabins;
 - trapping; and
 - trout fishing;
- Regionally, St'at'imc make considerable use of the area, with deer hunting and plant collecting in all watersheds.
- It is reported that MoF revoked the trapline of an Elder's father in Melvin Creek.
- Upper Melvin Creek would be unavailable for hunting and other traditional uses.
- Based on the interviews, the primary activity in the area is currently deer hunting. This occurs in late fall and winter, which coincides with the high season of the resort.
- Winter recreation activities outside the downhill runs but elsewhere in the valley are expected to include cross-country skiing, snow-shoeing and snowmobiling, which are likely also incompatible with hunting.
- Further interviews may identify spring and summertime resource collecting activities, which, if present now, would also be constrained by resort development.

- Snowmobiling, backcountry cross-country skiing and snow-shoeing could bring many recreational users into adjacent watersheds, affecting traditional deer hunting in these valleys – recreation and traditional hunting may conflict.
- It is possible that tour operators would be granted backcountry recreation permits to further these activities, or that the area may become better known, attracting more sports hunters, increasing pressure on game in adjacent valleys.
- Spring and summer traditional activities could be affected by greater numbers of hikers, ATV users, mountain bikers and other recreational users in adjacent valleys.
- In the long term, lands in adjacent watersheds may be considered for shops or services to travellers or recreational properties.
- The report's author indicates that mitigation options are connected to issues of aboriginal rights and title, and that these are issues which need the attention of lawyers. Bearing this in mind, she suggests some mitigation strategies for discussion purposes. (Note - St'at'imc Chiefs have not taken a position on these strategies.)
- Little mitigation is possible in Melvin Creek itself, other than the basic option of not developing the resort. With resort development, the valley would be unavailable for St'at'imc traditional uses. The valley could not be used for hunting, and other resource gathering activities would be limited.
- Suggested mitigation options are linked to St'at'imc control of resource management in the area – see section 6.6.1.
- Additional interviews with Chalath, Sekw'el'was, Skatin, Xa'xtsa and Samahquam people are needed to ensure cross-St'at'imc representation of input and views.
- Additional interviews specific to Melvin Creek are needed, to further explore other potential past activities and spiritual significance.

PROPONENT RESPONSE:

NGR's responses to St'at'imc concerns with respect to impacts on traditional use of fish and wildlife resources are recorded in section 6.6.1 (*First Nations Traditional Use Issues*). NGR notes that no fish are present in the Melvin Creek drainage except in the lowest few hundred meters above the confluence with Cayoosh Creek. The hunter's cabin and trail in Melvin Creek were built by the guide/outfitter. Nowadays, they are used occasionally by First Nations hunters.

PROJECT COMMITTEE POSITION:

The project committee responded to concerns regarding species of ethnobiological and ethnobotanical significance to the St'at'imc in previous sections of this report (see sections 6.2.3.2.1 - *Wildlife Resources - General* and 6.2.3.4 - *Threatened and Endangered Vegetation Communities*).

Generally, the project committee has concluded that the impacts on identified species in the development area will be adequately addressed through the mitigation/compensation measures proposed by NGR, coupled with an adaptive management approach in which monitoring and an effective feedback mechanism will allow refinement of these measures. To the extent that First Nations issues with respect to commercial and non-commercial fish and wildlife recreation reflect traditional use concerns, see the project committee's response section 6.6.1 (*First Nations Traditional Use Issues*).

The project committee did seek clarification from MELP on the status of traplines in the Melvin Creek area. According to MELP's records, trapping rights were originally issued to a Mr. Tommy Napoleon, a First Nations trapper from the Duffey Lake area, in 1926 – he had already trapped in the area for about six years prior to that. 1977 correspondence indicates that the trapline tenure was cancelled in that year (by MELP, under the Wildlife Act, not by MoF, which does not administer relevant legislation). Cancellation was due to lack of use. MELP has also confirmed that a trapline tenure was registered to named members of the Pemberton (Mount Currie) Band in 1933. Based on the text description of distances (in miles) along the boundary of the trapline territory, as registered, it is not clear that the tenure extended far enough northeastwards to include the Melvin Creek drainage, although as noted in the Fountain study (see below), the Pemberton Band application intended to include the drainage. In any event, according to MELP records, the Pemberton Band tenure registration was cancelled in 1975. In 1983, MELP adopted a lottery system to dispose of vacant traplines, and the tenure formerly held by Mr. Napoleon was awarded to another party. The current owner of the trapline has held it since December 1999.

C. Impacts on Traditional Use of Fish and Wildlife by First Nations (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

The report notes that, from 1932-1977, a trapline was registered by Mr. Tommy Napoleon (a Native man from Lillooet) for an area that included the Melvin Creek watershed. He built a cabin in either the Lost or Melvin valleys – this is not clear. There was some overlap between this trapline and a trapping area reserved for 'Mount Currie Band' (Pemberton) trapping. According to the report, the trapline registration application suggests that the area applied for included the entire Melvin Creek drainage, although a 1933 registration map included only the Melvin Lake part of the drainage. As of 1960, government records show the trapline to be in good standing.

1. FIRST NATIONS ISSUE:

[*Note - The Fountain report did not specifically raise trapline impact concerns associated with the proposed resort.*]

PROJECT COMMITTEE POSITION:

See above, project committee comments on the trapline issue in response to Creekside's *Cultural Heritage Study Final Report*.

Proponent's Commitments Relevant to Issue (6.3.4)

In order to further address commercial fish and wildlife recreation issues, NGR committed to:

- put forth best reasonable efforts to negotiate a mutually acceptable compensation arrangement for the guide/outfitter.

Status of Issue at Time of Referral to Ministers (6.3.4)

The project committee considers the issue of commercial and non-commercial fish and wildlife recreation resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Guide/outfitting and Trapping* – Localised impacts on guide/outfitting and trapping tenures in the Melvin Creek valley are unavoidable if the resort proceeds. Both tenures cover larger areas. NGR has agreed to make reasonable efforts to negotiate a compensation agreement with the local guide/outfitter. The trapping tenure has only recently been acquired by a new tenureholder, who has made no representations to the project committee.

6.4 SOCIAL AND ECONOMIC EFFECTS
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Preamble (6.4)

In its application, under Tab 16, NGR included the January 1996 report *Cayoosh Resort – Socio-Economic Impact Study*, by Urbanics Consultants Ltd. of Vancouver and Landscape Consulting Corp. of Lillooet. The report was actually commissioned by the Lillooet Select Economic Development Commission, and was undertaken from August to November 1995.

For the purposes of the study, the Lillooet area was defined as Electoral Areas A and B of the Squamish-Lillooet Regional District (SLRD), and included the communities of Lillooet, Lytton, Bralorne, Gold Bridge and Seton Portage/Shalalth. The area's population in 1995 was estimated at 4,631, and, in the absence of resort development, is projected to increase to 5,723 by 2007.

Following an economic overview of the Lillooet area, the study presented an economic impact analysis with respect to:

- investment effects;
- employment effects;
- income effects;
- expenditure effects; and
- balance of payments effects,

and a social impact analysis with respect to:

- the community of Lillooet;
- social infrastructure; and
- population effects.

The conclusions from the report indicated that, in terms of both the economic and social effects, the proposed resort will produce net benefits for the region

Overall, the project committee considered that the information in the consultant report provided useful background in evaluating the potential socio-economic impacts of the proposed resort on the surrounding region. At the conclusion of the application review stage in mid-1997, the project committee generally accepted the findings of the report, although it has followed up on specific issues raised by either the public or First Nations at subsequent review stages.

6.4.1 EMPLOYMENT EFFECTS

Issue(s) (6.4.1)

Issues included:

- estimating construction and operations-related employment generation;
- the nature of potential local employment opportunities; and
- the nature of potential First Nations employment opportunities.

Content of Application (6.4.1)

In NGR's application, the analysis in the Urbanics study concluded that insufficient data are available to determine basic direct/indirect and induced employment by industry or sector. However, based on available data:

- for resort *construction*, the number of direct seasonal jobs was estimated at 9,391 over the initial 10-year build-out period, which translates to 4,983 person-years of full-time equivalent construction-related employment, and
- for resort *operations*, 16,490 actual direct full-time/part-time operations jobs (or 10,746 person-years of operations-related direct employment).

The Urbanics study also estimated that, at year 10, the total direct on-site resort *operations*-related employment will be 3,630 seasonal operations jobs, with an additional 2,614 jobs estimated for direct resort-related tourism employment in food services, retail trade and transportation. This is deemed to equate to a total of 6,244 direct resort/accommodation-related seasonal jobs within the region. When employment multipliers are used (for Lillooet – 1.09), this figure is projected to increase to 6,806 seasonal operations jobs, or an equivalent of 4,056 person-years of accommodation and resort-related tourism employment. This equates to an estimated 20,146 equivalent

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person years of operations employment over the first 10 years. Urbanics documented all of the multipliers used for its analysis, and the rationale upon which it based these figures. Most operations jobs are expected to be filled by residents of the resort, of Lillooet, and to a lesser extent, of Pemberton.

By year 10, the Urbanics study predicted, again using multipliers, that the total of all direct, indirect and induced resort-related *construction* employment would amount to 6,437 person years. It attributed an additional 81 person years of access road construction employment to hiring by the province, in anticipation of NGR's expectation that the province would fund 50% of the cost of road construction.

Agency Review Comments on Application (6.4.1)

No agency comments were submitted on employment issues addressed in NGR's application.

Proponent's Responses to Agency Comments on Application (6.4.1)

Since no agency comments were submitted, NGR provided no further input at this stage of review.

Project Report Specifications (6.4.1)

The project committee generally accepted the findings of the application, and did not request any further employment-related information be presented in the project report.

Issue Treatment in Proponent's Project Report (6.4.1)

N/A

Agency Review Comments on Project Report (6.4.1)

N/A.

Proponent's Responses to Agency Comments on Project Report (6.4.1)

N/A.

Additional Issue Consideration (6.4.1)

A. Employment Estimates

In February 2000, an updated study of business and employment impacts and opportunities associated with the proposed resort development was produced by G. E. Bridges & Associates Inc. for the Lillooet Economic Development Commission, which represents the District of Lillooet on the project committee. The study was conducted with funding support from the Community Enterprise program of the Ministry of Community Development, Cooperatives and Volunteers (MCVVCV), as part of the province's goal of supporting grassroots community-led economic and social development. The study, entitled *Cayoosh Resort Business and Employment Impacts and Opportunities Study*, examined the economic development impacts related to the construction and operation of the resort over a 14 year period, which was intended to include the initial three years of development and the first eleven years of operations.

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This study concluded that the predicted benefits from the resort development are realistic, and that, with the necessary preparation and training, all people who are interested in participating in the project will have an opportunity to share in these benefits. In terms of direct employment, the study predicted lower numbers than the January 1996 Urbanics study, concluding that the resort will create an estimated 16,162 person years of total employment, including 2,889 person-years of construction employment and 13,273 person-years of operating employment over the 14 year period adopted for the study. With the addition of indirect and induced employment, total employment increases to 19,077 person years.

The study also matched potential jobs and skill requirements with existing firms and workers in the Lillooet/Pemberton area. It was estimated that, during the development phase, ca. 30% of the construction work could be supplied by local firms (if available and qualified). Local construction workers and tradespeople, local lumber mills, and local retailers would all be in a position to participate. Similarly, the Bridges study identified a range of local opportunities for employment in maintenance and resort service jobs and in off-site services in the communities of Lillooet, Pemberton and Mount Currie. The study recommended that, if local communities, businesses and workers wish to maximize their benefits, preparation and training should be undertaken as soon as possible.

On April 24, 2000, NGR provided its own latest estimates of the employment and investment impacts resulting from the resort development – see chart in section 6.4.2 (*Investment, Income and Expenditure Effects*) for full details. Specifically with respect to employment creation, NGR estimates that, over the 14-year projected build-out program:

- construction employment will average 290 person years for 14 years (4060 person years in total); and
- operations employment will average 1150 person years for 14 years (16,100 person years in total).

NGR's estimated total of 20,160 person years of employment over 14 years is some 5.5% higher than the Bridges estimate.

B. Employment Training

NGR's application did not deal in any detail with the issue of employment training, and it was not an issue which was raised in public comments, although it was raised in two of the St'at'imc reports.

It should be noted that there are no government policy expectations with respect to hiring policies and practices (e.g. for employment equity), employment training or conditions of employment in the private sector. For example, government does not stipulate hiring quotas which private developers are required to meet. Nonetheless, NGR, in defining its project planning needs, will find it beneficial to consider its policies and objectives with respect to these matters, and its projections for local vs. out-of-area hiring, hiring by gender, employment of First Nations people, employment of individuals on social assistance, etc.

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While private sector proponents are not subject to any government expectations that they will sponsor training programs for their employees, for its part, government and various other parties do sponsor a variety of employee training programs in British Columbia. Of relevance to this project would be ski area, hotel, management and tourism programs offered by the ski industry, government, Selkirk College, College of the Rockies and Cariboo College. The Ministry of Social Development and Economic Security (MSDES), through its regionally-based Industrial Adjustment Consultants, encourages proponents to begin to consider human resource planning needs, including employee training, as early as possible in project planning. MSDES attempts to identify relevant training resources, and encourages proponents to focus on BC residents and the options available for local hiring. Industrial Adjustment Consultants are located in the MSDES Employment and Benefits Division's regional offices, as are staff for MSDES' other programs.

The following government-sponsored training programs may be of interest to the proponent:

- Youth Options BC (MAETT sponsors Student Summer Works and Youth Community Partnerships, MSDES sponsors the Job Start program; MELP sponsors the BC Environment Youth Team);
- School to Work Transition Programs (MEd);
- Skills for Employment program (HRDC-sponsored);
- Co-operative Education (MAETT);
- Apprenticeship Training (BC Industry Training and Apprenticeship Commission);
- BC Benefits (MSDES);
- Industry Training and Adjustment Services (MSDES);
- Workplace-based Training (MSDES);
- Forest Renewal BC (Forest Renewal BC); and
- Community Skills Centres (MAETT).

As well as these programs, HRDC sponsors an extensive array of training programming, and there are various sector organisations which have developed training tools for use throughout a given sector. As noted, the hospitality and tourism sectors have been active in developing training plans, and NGR may wish to contact organisations such as the Council of Tourism Agencies or the Pacific Rim Institute of Tourism in this regard.

Public Comments on Issue and Project Committee's Position (6.4.1)

1. PUBLIC COMMENT:

The project will provide much needed employment in the Lillooet/Pemberton area, where the forest sector is in decline.

PROJECT COMMITTEE POSITION:

The project committee is satisfied that the project has the potential to create a significant number of new employment and business opportunities in the area.

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2. PUBLIC COMMENT:

NGR should commit to hiring local contractors.

PROJECT COMMITTEE POSITION:

The project committee considered this to be an issue to be worked out between NGR and local economic development organisations, businesses and workers. NGR has indicated its intention to focus on local hiring, where possible.

3. PUBLIC COMMENT:

Jobs at the resort will likely be low-paying.

PROJECT COMMITTEE POSITION:

The project committee is satisfied that there will be a variety of jobs at various pay levels and economic development opportunities. Wage rates are an issue to be negotiated between employers and employees.

First Nations Comments on Issue and Project Committee's Position (6.4.1)

A. Employment Estimates and St'at'imc Participation

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Socioeconomic Impact Analysis Report*.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

1. FIRST NATIONS ISSUE:

Part II of the report, prepared by Columbia Pacific Consultants, reviewed the January 1996 Urbanics *Socio-economic Impact Study*, estimated the number of indirect jobs which could be generated by the project, prepared brief profiles of the eleven St'at'imc communities, estimated potential jobs and income accruing to St'at'imc communities, and discussed the means through which the Bands could potentially benefit from the project being located in St'at'imc traditional territory.

Key findings – may be summarized as follows.

- The employment numbers in the Urbanics study were overstated, particularly as a result of the use of a 72% gross-up to determine direct tourism jobs. Moreover, the study appears to consistently use the upper bounds of estimates (e.g. upper bound multiplier, person year defined as 1837 hours, rather than more standard 1900-2000 hours).
- Based on the consultant's inconsistency in applying "rules of thumb" to generate direct job numbers and after reviewing the EA application submitted for the proposed Garibaldi at Squamish mountain resort project, it appears that direct employment may be overstated.
- Although the overstatement will reduce the number of jobs available, this should not significantly affect the ability of St'at'imc individuals to work at the project, but

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may increase competition levels. This will have to be addressed in any agreement negotiated with NGR.

- Hiring for a large number of direct jobs will not be controlled by NGR. The means through which to include these jobs in any agreement reached with NGR should be discussed as part of any negotiations between the St'at'imc and NGR.
- The project has the potential to significantly reduce unemployment among St'at'imc individuals and communities. However, there is currently insufficient information available to undertake a skills/interests to requirements matching exercise which would serve to identify a more realistic potential employment scenario.
- Distance from the project site to many of the St'at'imc communities may limit the number of people capable of working at the site if they have to stay in accommodation located away from their families for the period of their shifts.
- The 16-to-18-year build-out period would give those interested in trades more than sufficient time to earn their journeyman status. Again, this issue would have to be addressed in an agreement with NGR to the extent possible, since third party interests will undertake many of the building projects.
- There are a wide range of economic opportunities which the Bands could explore relative to this project, for example: (1) providing services on an independent contract basis (e.g. transportation, cleaning, etc.); (2) owning and operating restaurants or hotels; (3) developing joint-ventures with NGR or third party interests who will be locating on-site; (4) offering St'at'imc cultural experiences on-site; (5) operating a St'at'imc retail store (this would offer opportunities on reserve for those who create the items to be sold); and (6) working with NGR to develop the resort with a St'at'imc theme that could be marketed worldwide.
- Several different options for ensuring that the St'at'imc benefit from the project being located on their traditional territory can be explored with NGR, including rent, profit sharing, and ownership interest. However, the exact amount that the St'at'imc can expect to garner from NGR will be determined by the profitability of the resort.

Main conclusions – may be summarized as follows:

- The greatest short-, medium- and long-term benefit to the St'at'imc communities and individuals from the proposed resort development would derive from a combination of employment and economic development opportunities, rather than from direct payments for use of the land.
- Although the Urbanics study overstates the number of jobs which will be created by the project, the revised numbers still provide sufficient opportunity for the St'at'imc to significantly reduce their unemployment levels.
- First steps to more accurately determine the potential for employment for St'at'imc individuals on this project are to undertake a "bottom-up" program of matching existing skills to labour requirements, identifying (1) individuals who would be willing to undertake training required to gain employment with the project, and (2) those interested in economic opportunities.
- In negotiating an employment agreement with NGR, it will be necessary to clearly define the types and numbers of jobs under discussion, since most "direct" employment generated by this project will not be controlled by NGR directly, but rather will result from third-party investment in accommodation services. For this

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reason, the St'at'imc may wish to ensure that any employment agreement would extend to these third parties, in addition to NGR.

- Additional study is required with respect to employment, economic development and other opportunities to gather the information required by the St'at'imc to ensure that the agreements reached will provide the greatest benefit possible to St'at'imc communities.
- Any agreement negotiated with NGR should be included as part of the EA project approval certificate, in order to enable the EAO to monitor compliance with the agreement, and to provide a process through which the St'at'imc can raise their concerns and have them addressed.

PROPONENT RESPONSE:

NGR has responded to the Columbia Pacific Consultants report as follows:

- NGR appreciates that the regional Urbanics study may be slightly outdated and the study may overstate the tourism jobs as determined in the St'at'imc study. It is very difficult to precisely determine the number of direct and indirect tourism jobs, given uncertainty about the resort's level of marketing success. If the resort is extremely successful, the Urbanics employment estimates could be exceeded, since the number of jobs created by destination tourist visitors is significantly higher on a per-visitor basis than jobs created to service regional or local skiers.
- It is difficult to compare estimates for the proposed Melvin Creek/Cayoosh resort to those for the proposed Garibaldi at Squamish project, or to actual employment figures for the Whistler/Blackcomb resort or ski areas in the Vancouver area. The intent is that the Melvin Creek/Cayoosh resort will have the highest number of destination visitors in British Columbia, and as a percentage of the total guest base, its destination skiers will be a much higher percent of the total skier visits than is achieved at the Whistler/Blackcomb resort, where day visitors and regional skiers continue to constitute a large component of the annual skier visits.
- Even if the Columbia Pacific statement is accurate, and benefits are overstated, the employment and economic impact of this resort project would be very significant in a regional context. The February 2000 Bridges study concluded that "... The economic development benefits from the Cayoosh Resort are real and if the necessary preparation and training is undertaken, all motivated people can have an opportunity to share in the benefits from the Resort..."
- Generally, NGR agrees with the conclusions and findings of the Columbia Pacific study, and is prepared to meet with those St'at'imc communities which are interested in developing strategies and relationships to maximize the opportunity for the communities to benefit.
- The Columbia Pacific study has correctly identified an important issue, namely NGR's possible inability to control hiring practices and work opportunities throughout the resort. NGR will not control the vast majority of employment opportunities within the resort. NGR is committed to outlining First Nations employment strategies with all private sector investor/developer groups. However, there may be some difficulties in compelling or obligating independent third parties which are investing or developing projects within Melvin Creek. NGR is committed to review and develop a strategy to have third-party developers and investors clearly understand and co-operate in the economic and employment participation of First Nations people in the resort project.

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NGR is committed to:

- establishing hiring practices and procedures to address St'at'imc issues;
- employing a qualified St'at'imc personnel person in a key role within the resort's Manpower Department; and
- informing all investors/developers of the availability of St'at'imc personnel seeking employment within the resort, and of NGR's commitment to involve interested St'at'imc employees and investors.

NGR has committed to, and is interested in, developing employment and economic strategies which would help to realise optimum direct benefits from resort development. Beyond that, NGR notes that additional economic opportunities would be available as a result of stimulated regional tourism, and that economic opportunities could be created on reserve lands, especially on the Lillooet, Cayoose Creek and Mount Currie reserves. NGR is willing to agree to conditions placed on any EA approval to have EAO monitor First Nations employment and investment participation in the project.

On May 23, 2000, NGR's original consultant, Urbanics, responded to the Columbia Pacific review of its 1996 Cayoose Resort Socioeconomic Impact Study. Urbanics defended its original methodology, and set out to explain why Columbia Pacific's revised estimates for total employment were understated. Urbanics noted that the most important difference between Columbia Pacific's employment forecast and that prepared by Urbanics in 1996 rested on the interpretation and use of the 'direct tourism ratio' (as outlined in the publication *British Columbia Local Area Economic Dependencies and Impact Ratios*). The primary intent in applying this ratio is to make a reasonable estimate of the amount of employment-generating tourism activity beyond accommodation services. This includes other strong tourism-related/impacted activities such as food services, retail trade and transportation. Urbanics explained how its original application of the direct tourism ratio resulted in a figure derived for 'total employment in accommodation services' which was somewhat overstated, while the figure derived for 'additional direct employment' was understated. According to Urbanics, the net effect of its original application of the direct tourism ratio was that its forecast of total employment was understated.

PROJECT COMMITTEE POSITION:

The project committee is satisfied that the project has the potential to create significant income, employment and economic development opportunities for Bands in the St'at'imc territory. The extent of the economic benefits will vary, depending on developmental and preparation work undertaken by St'at'imc Bands, training provided, uptake by individual members and arrangements negotiated with NGR. NGR has made an extensive array of commitments with respect to providing opportunities for St'at'imc communities to benefit economically and socially from resort development – see this section for NGR's employment-related commitments, and section 6.6.1 (*First Nations Considerations*) for broader related commitments. The province has offered to be a party in discussions between NGR and St'at'imc to identify programs and services which might complement any economic agreements concluded between the parties and to discuss other First Nations interests. If

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ministers decide to grant to the project an EA certificate, the project committee is recommending that a condition be attached, requiring NGR to file reports annually with ministers and the EAO until at least Phase Two project construction is completed, or longer if deemed necessary by EAO and First Nations participants. The reports would document NGR's hiring record. NGR has committed to support such a condition.

B. St'at'imc Employment Training Interests

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort* (undated).

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. An April 7, 2000 letter from Chief Mike Leach, on behalf of St'at'imc Chiefs, reaffirmed that the study is considered a draft which may need further work, once the *Cultural Heritage Study Final Report* is completed.

Part I of the report addressed the social and cumulative impacts of the resort development on the eleven St'at'imc communities. Employment training issues were included in the Education, Day-care and Employment Development section of the report.

1. FIRST NATIONS ISSUES:

Each Band Council of the St'at'imc Nation has developed its own education and employment training programs. Employment skills development related to the tourism sector has been identified as a high priority. Opportunities for a centrally co-ordinated employment development program, serving all of the St'at'imc, should be incorporated into any in-depth assessment of existing skills, community interests and existing training resources. The report identified the goal of 30% of resort-related employment for First Nation members, and made the following training-related recommendations:

- With new funding resources provided by Human Resources Development Canada (HRDC), develop a comprehensive St'at'imc Employment Development Program which targets skill and job readiness training for youth, adults and potential entrepreneurs/small business owners in the tourism sector, using the proposed resort, the Whistler/Blackcomb resort and the Sun Peaks resort as partners.
- Using resources provided by HRDC, develop a comprehensive inventory of existing training resources and skill trainers among the St'at'imc. Use community focus groups to identify training and skill area deficiencies to address these gaps. Develop a multi-year training strategy and budget which includes skills upgrading, job readiness and on-the-job work experience opportunities in the tourism and accommodation industries.

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PROPONENT RESPONSE:

NGR supports and agrees with the employment training goals, objectives and recommendations outlined in the Education, Day-care and Employment Development section of the report. NGR commits to providing job training opportunities within the resort for all training programs.

PROJECT COMMITTEE POSITION:

MSDES has advised the project committee that the key initial step in identifying First Nations employment training needs is for NGR to more clearly categorise the types of jobs available in both construction and operations. While the project has a long-term timeline, job categorisation should initially focus on the first three to five years. MSDES' Industry Adjustment Services (Community Agreement) could act as a facilitator between NGR and First Nations in developing a Human Resources Plan. Such a mechanism would also allow MSDES to ascertain employment opportunities for income assistance clients and non-Aboriginal youth. MSDES and MAETT can probably also suggest other possible facilitators of such a process (e.g. from the Indigenous Governance Institute or the Conflict Resolution program or the Dispute Resolution Centre at the University of Victoria, the Justice Institute of BC or MAG's Mediation Roster), if that approach were to be preferred by the parties. Government could also provide advice to NGR and St'at'imc on provincial public training opportunities for program articulation and credentialing issues, based on experience with establishing such arrangements for public sector projects.

The project committee cannot speak for HRDC, and whether or not it would provide new funding to St'at'imc for training-related purposes, as suggested in the St'at'imc Social and Cumulative Impact Analysis report. St'at'imc Bands would need to address issues related to the allocation of HRDC funds with the fund distributing organisations. HRDC has provided the project committee with a brief explanation of how it funds First Nations training initiatives. On April 1, 1999, HRDC launched the *Aboriginal Human Resources Development Strategy* (AHRDS), providing Aboriginal organizations with the authority to design and deliver programs and services to support Aboriginal employment and training. This devolution is the culmination of a fifteen-year trend which has seen the gradual transfer of programming authority from the federal government to Aboriginal people at the national, regional and community level. The two main objectives of the AHRDS are: (1) to enable Aboriginal groups to deliver a wider range of human resource programs; and (2) to enable Aboriginal organizations to assist clients to prepare for, obtain and maintain employment. These objectives are pursued through the work of *Aboriginal Human Resources Development Agreement* (AHRDA) holders. The agreements define the authority of regional Aboriginal organizations to set priorities, design employment and training programs, and co-ordinate labour market training activities in the geographic area which they serve. In BC, there are ten First Nations AHRDAs and one Metis AHRDA. The financial assistance which Aboriginal organizations receive from HRDC under the AHRDA comes from two sources:

- Under section 63 of the *Employment Insurance Act*, Aboriginal organizations negotiate with Canada to receive funding to cover the costs of providing their own employment benefits and measures, similar to HRDC employment benefits and measures. These contributions are known as Employment Insurance funds.

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- Under the Aboriginal Labour Market program, the HRDC Minister provides additional funding to Aboriginal organizations to help them develop and implement labour market programs that are tailored to the special employment needs of Aboriginal peoples. This type of assistance is provided through Consolidated Revenue Fund.

The ten First Nation AHRDAs provide labour market programs (including child care programs) to all First Nations living in their geographic area, on and off reserve, including people with disabilities, and youth.

Proponent's Commitments Relevant to Issue (6.4.1)

In order to further address employment effects, NGR has committed to:

- make reasonable efforts to maximize employment and economic development opportunities for local residents in the Lillooet and Pemberton areas (**Note** – NGR will approach this by working with federal, provincial and local government staff and relevant community organisations involved in education, skills training and economic development to ensure that residents are well informed of potential employment opportunities, development schedules and contracts, as well as any other economic development opportunities which could benefit local residents and neighbouring communities);
- meet with interested St'at'imc communities to develop strategies and relationships to maximize employment opportunities;
- establish hiring practices and procedures to address St'at'imc issues;
- employ a qualified St'at'imc personnel person in a key role within the resort's Manpower Department;
- review and develop a strategy to have third-party developers and investors clearly understand and co-operate in the economic and employment participation of First Nations people in the resort project;
- outline First Nations employment strategies with all private sector investor/developer groups, and inform them of the availability of St'at'imc personnel seeking employment, and of NGR's commitment to involve interested St'at'imc employees and investors;
- develop youth recreation programs to introduce youth from all interested St'at'imc communities to tourism in general, and the resort project in particular; and
- provide job training opportunities within the resort linked to all training programs.

Status of Issue at Time of Referral to Ministers (6.4.1)

The project committee considers employment issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Economic and employment effects* - According to three social and economic impact studies, the project has the potential to create significant income, employment and economic development opportunities for local residents. Estimates of total direct and indirect employment, including both construction and operations, exceed 20,000 person years during the first 14 years of construction /operations activity. If realised, these benefits would contribute substantially to the economic and social well-being of communities, including local Aboriginal communities, if they are will to participate in the project's employment opportunities.

6.4.2 INVESTMENT, INCOME AND EXPENDITURE EFFECTS

Issue(s) (6.4.2)

The issue consisted of estimating the investment, income and expenditure effects of the proposed development.

Content of Application (6.4.2)

Investment effects – The preliminary capital budget for the resort's lift and on-mountain investment was estimated by Urbanics at \$88 million (in 1995 \$) for the initial 10-year period. Public and private accommodation capital investment, including infrastructure, was estimated at \$510 million over the same period. Based on NGR's intent to seek road funding assistance from the province, the consultants assumed that the province would invest a further \$8.8 million.

Income effects - Urbanics completed a detailed income effects analysis, based on the figures from the employment effects analysis – see section 6.4.1. Urbanics estimated the total direct and indirect payroll income, generated through both construction activity and operations related to the resort. It also determined that the majority of the operating revenues would accrue to residents in Lillooet, Pemberton and residents of the resort, although a complete spatial distribution of this income was impossible to estimate with any confidence. It was determined in the income effects analysis that the project should generate approximately \$534.4 million in total (after-tax) construction and operations payroll income over the initial 10-year development period. It also attributed an additional \$2.9 million in after-tax construction income to the road construction activity which NGR is expecting the province to undertake.

Expenditure effects – The consultants estimated that over the initial 10 years, lift and resort development would generate more than \$1.7 billion (or \$314 million at year 10) in destination-skier-related expenditures from outside BC, and some \$314 million (or \$27 million at year 10) in non-skier employee-related expenditures within the region.

Agency Review Comments on Application (6.4.2)

No agency comments were submitted on investment, income and expenditure effects issues addressed in NGR's application.

Proponent's Responses to Agency Comments on Application (6.4.2)

Since no agency comments were submitted, NGR provided no further input at this stage of review.

Project Report Specifications (6.4.2)

The project committee generally accepted the findings of the report, and did not request that any further information be required in a project report.

Issue Treatment in Proponent's Project Report (6.4.2)

N/A.

Agency Review Comments on Project Report (6.4.2)

N/A.

Proponent's Responses to Agency Comments on Project Report (6.4.2)

N/A.

Additional Issue Consideration (6.4.2)

The February 2000 Bridges study (see section 6.4.1) concluded that construction of the project would generate an estimated \$6.8 million in income tax revenue over the development period, \$10.1 million over the first 5-year operating phase and \$9.8 million over the second operating phase. The resort would generate an estimated total of \$26.7 million (undiscounted) in construction income taxes over the 14-year period (at an average annual rate of \$1.9 million per year). Of this amount, an estimated \$17.7 million would accrue to the federal government, and \$9.0 million to the provincial government.

It is estimated that operation of the resort would generate \$2.5 million in annual income tax income at the fifth year of operation, increasing to \$4.7 million per year in the eleventh year of operation. At the fifth year, \$1.6 million would accrue to the federal government, and \$830,000 to the provincial government. At the eleventh year of operation, this would increase to \$3.1 million to the federal government, and \$1.6 million to the provincial government.

This amounts to an estimated total of \$40.5 million (undiscounted) in operating income taxes over the 11-year operation period. Of this amount, an estimated \$26.8 million would accrue to the federal government, and \$13.7 to the provincial government.

On April 24, 2000, NGR provided further estimates on the employment and investment impacts resulting from resort development. Referencing previous studies (Urbanics 1996; G.E. Bridges, 2000, and Columbia Pacific, 2000), NGR noted that, although the results of the various studies have differed somewhat, regardless of which analysis is used, employment and investment opportunities are significant. NGR's updated information was based on the original 1995 capital investment estimates of Urbanics, as well as the estimates generated by Columbia Pacific Consulting (2000) for the St'at'imc socio-economic study. Expenditure and taxation effects were reduced to reflect the fact that the project has been scaled back by ca. 15% from the original proposal. The 1995 dollar figures have been adjusted by 8.25% to reflect year 2000 values.

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Summary of Adjusted Capital Investment (Year 2000), 14-Year Build-Out Program

Lift and related mountain capital investment (a 9% reduction in lift capacity)	\$87,229,150
Accommodation Capital Investments	\$450,693,561
Total Capital Investment	\$537,922,711
Construction Employment	Average of 290 person years per year for 14 years
Operations Employment	Average of 1150 person years per year for 14 years
Expenditure Effects	More than \$1.52 billion (\$288.8 million at Year 14) in destination-skier-related expenditures from outside BC, and some \$288.7 million (\$25.1 million at Year 14) in non-skier employee-related personal expenditures within the region
Balance of Payments	The balance of payments effects associated with skier visits from the USA and off-shore points of origin equate to an estimated \$1.01 billion over the entire 14 year resort build-out period.
Taxation Effects	Over the 14 year build-out period, tax revenues are expected to increase as follows: <ul style="list-style-type: none"> • federal/provincial income tax - \$126.7 million • provincial accommodation tax - \$39.0 million • federal/provincial sales tax - \$130.7 million (from out of province skiers) • federal/provincial sales tax - \$40.4 million (from personal expenditures from construction and operational payroll incomes)

Public Comments on Issue and Project Committee's Position (6.4.2)

1. PUBLIC COMMENT:

The project will bring much-needed economic and social benefits to local communities, and should be approved now, without further EA review.

PROJECT COMMITTEE POSITION:

With respect to the issue of project approval, this comment was received during the application review stage. Under the EA Act, it was not possible to make an EA certification decision at that review stage, because significant issues remained unresolved. With respect to project benefits, if the project can overcome the identified marketing and financial challenges noted in section 5.8, benefits of this sort will accrue to local communities. The project committee has concluded that the project represents a legitimate business opportunity.

2. PUBLIC COMMENT:

Project will generate large tax revenues and create hundreds of jobs.

PROJECT COMMITTEE POSITION:

See this section, and also the project committee's response to item #1.

3. PUBLIC COMMENT:

Sceptical of project viability due to current status of ski industry

PROJECT COMMITTEE POSITION:

See the project committee's response to item #1, and also to similar points in section 5.8 (*Project Feasibility*).

4. PUBLIC COMMENT:

Ski development will provide a badly needed economic boost for the local area.

PROJECT COMMITTEE POSITION:

See the project committee's response to item #1.

First Nations Comments on Issue and Project Committee's Position (6.4.2)

No specific comments on investment, income and expenditure effects were provided in the First Nations studies which were submitted on March 28, 2000. There are extensive comments on the related issue of employment opportunities in two St'at'imc studies – see section 6.4.1 for discussion.

Proponent's Commitments Relevant to Issue (6.4.2)

None with respect to this issue.

Status of Issue at Time of Referral to Ministers (6.4.2)

The project committee has concluded that NGR's investment, income and expenditure effects information is adequate for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Community stability effects* – The resort would bring change locally, and there will be both beneficial and adverse effects on local communities, especially Lillooet, if the resort proceeds. The project committee concurs with the view of most local residents that, on balance, given its job creation and regional income contributions to the economy, the resort should have a stabilizing influence on communities which have recently suffered from a local decline in forest sector activity.

6.4.3 ACCOMMODATION EFFECTS

Issue(s) (6.4.3)

This issue concerned:

- the need for employee accommodation at the resort;
- implications for demand for off-site accommodation of the workforce; and
- housing concerns of First Nations.

Content of Application (6.4.3)

In section 16 of the application, NGR included a January 1996 report entitled *Cayoosh Resort - Socioeconomic Impact Study*, undertaken by Urbanics. The report discussed the implications of the proposed project for housing, both at the resort and in the surrounding area. It noted that the implications of the resort development for housing depended upon where employees decided to live. The report assumed that 50% of employees would reside in resort-based accommodation, 40% in Lillooet and 10% in Pemberton. Based on these assumptions, the report predicted the quantity of new housing needed through to full build-out of the resort in order to accommodate resort employees.

The Urbanics report identified the main implication of increased housing pressure as a corresponding increase in property values and hence, housing prices and rents. The report noted that there was considerable serviced land in Lillooet and on adjacent Indian Reserves which would be suitable for housing development. However, due to the magnitude of the projected growth, the report suggested that new serviced areas would also have to be developed, and that this would require significant planning and capital investment. In order to manage the impacts, both positive and negative, of the proposed resort, the report recommended that Lillooet and adjacent First Nations communities jointly undertake a growth management strategy.

Agency Review Comments on Application (6.4.3)

MMA, in its March 6, 1997 correspondence, noted that NGR's application did not effectively address the issue of demand and supply of housing and other infrastructure in the communities of Lillooet and Pemberton.

Proponent's Responses to Agency Comments on Application (6.4.3)

NGR responded to MMA's concerns in a letter dated May 9, 1997. NGR disagreed with MMA's position, arguing that it felt it had examined impacts on the demand and supply of housing in Lillooet and the surrounding area. NGR suggested that Lillooet would likely experience the greatest change in growth rate if the proposed resort were developed, since Pemberton was already experiencing significant growth due to the influence of Whistler. Quoting the Urbanics report, NGR pointed out that Lillooet's population could increase by up to 5,000 people by the end of the final build-out phase of the project. This would require approximately 1624 new residential units.

Urbanics did not examine impacts on the existing infrastructure in Lillooet or Pemberton, but NGR committed to assist both communities in establishing growth models during the post-EA stage of review. NGR also noted that Pemberton, Lillooet and adjacent First Nations bands were able to control growth through community planning and zoning regulations. If all of the surrounding communities decided to limit growth below the housing requirements for the employees of the proposed resort, NGR would increase the percentage of on-site employee housing in order to address the issue.

Project Report Specifications (6.4.3)

The project committee did not seek for reporting on this issue from NGR in the project report. Instead, the project committee accepted Lillooet's offer to provide MMA with detailed information on accommodation supply in its community.

Issue Treatment in Proponent's Project Report (6.4.3)

Since there were no further reporting requirements of NGR, there was no further treatment of this issue in the project report.

Proponent's Responses to Agency Comments on Project Report (6.4.3)

Since no further concerns were identified, NGR provided no further comment on this issue.

Special Submission by the District of Lillooet (6.4.3)

Lillooet prepared and submitted to MMA a report entitled *District of Lillooet Housing Needs Assessment for Cayoosh Resort* on February 27, 2000. The report was subsequently forwarded to EAO on March 9, 2000.

The report presented Lillooet's anticipated housing needs in light of its own annual growth rate and the projected impacts of resort development. Lillooet determined that its population would increase by 583 people in the first year of operation (assumed to be 2003), and by 5700 by full build-out of the resort (assumed to be 2012). This would mean a total population of 8719 by 2012 (a near tripling of the current population).

The report included a summary of the current housing situation in Lillooet. Lillooet currently has approximately 1001 dwelling units, consisting of single family units (85%), apartment units (10%) and multi-family units (5%).

Lillooet noted that, in the event of resort development, increased pressures for housing would likely be greatest on areas like the Central Lillooet district, which have an established infrastructure (i.e. serviced lots). By developing vacant lots, creating secondary suites in residential and commercial properties, and maximising density capacities, Lillooet anticipates that it can keep pace with the project's demand for housing until 2007. In 2005, Lillooet will review its current OCP, and will make any adjustments necessary to address the housing impacts of the resort. Increased housing needs after 2007 are anticipated to be met by development of the East Lillooet area. Analysis indicated that this area should be able to meet those needs adequately. Existing tourist accommodation facilities were anticipated to be able to meet the increased winter demand resulting from the resort development.

Follow-up Exchanges (6.4.3)

In its March 9, 2000 correspondence, MMA indicated that the report submitted by Lillooet represented a satisfactory response to its request for further information.

In its March 22, 2000 correspondence, Pemberton commented that, in its opinion, the Lillooet's housing report overestimated the percentage of resort employees who would reside in Pemberton. Rather than the 10% figure identified in the report, Pemberton suggested that 5% to 7% would be more realistic. This was based upon the relatively high cost of accommodation in Pemberton, and the lack of any apartment-type residences. Pemberton also noted that its current experience with Whistler-based employees supports this conclusion. In that case, some mid-management employees reside in Pemberton, but generally, lower-income workers find it too expensive.

Public Comments on Issue and Project Committee's Position (6.4.3)

No public concerns were raised with respect to accommodation issues.

First Nations Comments on Issue and Project Committee's Position (6.4.3)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort* (undated).

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. An April 7, 2000 letter from Chief Mike Leach, on behalf of St'at'imc Chiefs, reaffirmed that the study is considered a draft which may need further work, once the *Cultural Heritage Study Final Report* is completed

Part I of the report addressed the social and cumulative impacts of the resort development on the eleven St'at'imc communities. Housing and accommodation issues were included in the discussion.

1. FIRST NATIONS ISSUES:

The report noted that the resort development would exacerbate an existing housing supply shortage, both on reserve in the St'at'imc communities and off-reserve in the adjacent communities of Pemberton and Lillooet, as prospective First Nations employees at the resort seek affordable family housing. For various reasons, all St'at'imc communities face existing shortages in housing resources. The resort would increase the demand for housing in St'at'imc communities in three potential ways: (1) members now living out of the area may return to seek employment at the resort; (2) members living in more remote communities may join relatives in communities closer to the resort in order to seek employment opportunities; and (3) members currently living in Lillooet may relocate, due to increased housing costs.

The report suggested several options to address the housing issue and ensure that it does not become a deterrent to First Nations people being employed at the resort. These options included: (1) establishing mobile home parks at each of the St'at'imc gateway communities, with space for both temporary (RV camper) and permanent (manufactured home) residences for First Nation resort employees; (2) developing a

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multi-purpose hostel as part of the resort development; (3) creating a St'at'imc Housing Development Corporation and Trust Fund; (4) requiring resort hotel developers to contribute to this trust fund; and (5) reserving a certain portion of land in the resort development for multi-family housing intended for sale or rental to First Nations employees.

The report made the following recommendations:

- develop, with NGR and the province, an employee housing program which provides both suitable short-term/weekly housing and family-oriented affordable housing on-site for First Nation members; and,
- develop a St'at'imc Housing Trust Fund to assist First Nations to address chronic housing shortages in a long-term manner which both enhances St'at'imc communities and ensures maximum First Nations employment in businesses associated with the resort.

PROPONENT RESPONSE:

NGR generally agrees with the comments and conclusions of the housing resource section of this report and takes no issue with any of the conclusions or recommendations. NGR has indicated to St'at'imc that, if the resort proceeds, it is prepared to pay land use fees to St'at'imc in recognition of their land rights and their support of the project. Such fees would provide sufficient funding for an employee housing program or an employee housing trust fund. NGR suggests that some proportion of the annual lease fees or a fixed amount from the annual payment be allocated by St'at'imc to the proposed housing trust fund.

PROJECT COMMITTEE POSITION:

Lillooet has advised the project committee that it currently provides various municipal infrastructure services to the T'it'kit (Lillooet) and Sekwel'as (Cayoosh Creek) Band lands. Increased growth on First Nations lands resulting from resort development would impact on Lillooet's infrastructure and its ability to provide servicing to that infrastructure. Lillooet is faced with several challenges as a result of anticipated demands for growth of municipal infrastructure. Long-term infrastructure improvement projects have been identified and included in long-term budgets. Whether the housing needs are met on First Nations lands or within the municipality (or in combination) is not considered a problem to long-term infrastructure planning - both approaches can be accommodated.

The project committee is satisfied that the commitment of NGR to work with the communities of Lillooet and Pemberton to establish growth models during the post-EA stage of review will help alleviate accommodation problems created in those communities as a result of project development. If NGR wishes to attract a sufficient and qualified workforce, adequate accommodation will be necessary. If the housing in surrounding communities is inadequate, NGR will need to increase on-site housing, or risk a shortage of qualified employees. Negotiations between First Nations and NGR are ongoing. The project committee is of the opinion that any dedicated First Nations housing should be the subject of those negotiations.

The project committee notes, on page 4 of the St'at'imc report, that there is an existing waiting list for residential accommodation for housing within the jurisdiction of the St'at'imc communities, and that the resort, if approved, will increase the demand for housing by St'at'imc members. If that is the case, it may be worthwhile for the St'at'imc communities to pursue the concept of a St'at'imc Housing Development Corporation and Trust Fund, regardless of this project.

Proponent's Commitments Relevant to Issue (6.4.3)

The proponent has committed to:

- assist Lillooet, Pemberton and First Nations communities in establishing growth models during the post-EA and post-master-development-agreement stages;
- if all of the surrounding communities decide to limit growth below the housing requirements for the employees of the proposed resort, increase the percentage of on-site employee housing;
- work with St'at'imc communities and the province to develop an employee housing program which provides both suitable short-term/weekly housing and family-oriented affordable housing on-site for First Nations members; and
- work with St'at'imc communities and the province to develop a St'at'imc Housing Trust Fund which assists First Nations to address chronic housing shortages in a long-term manner that both enhances St'at'imc communities and ensures maximum First Nations employment in businesses associated with the resort.

Status of Issue at Time of Referral to Ministers (6.4.3)

The project committee considers accommodation issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Accommodation effects* – Significant on-site employee housing is planned, since the resort is located 50 km from the nearest community (Lillooet). In addition, both Lillooet (where most workers will live) and Pemberton have advised the project committee that they are in a position to respond to increased demands for accommodation as resort operations expand. With good forward planning by the resort and local communities, the supply of housing should be sufficient to meet projected population growth locally, associated with resort development.

6.4.4 SERVICE DELIVERY EFFECTS

Issue(s) (6.4.4)

Issues raised included:

- the impacts of the resort on delivery and availability of a range of social service and local government services (health [see section 6.5], education, day-care, policing and fire-fighting services); and
- First Nations aspects on these issues.

Content of Application (6.4.4)

In the January 1996 Urbanics/Landscape socio-economic assessment, the consultants noted the following:

- there could be an increase of 30 to 40% in emergency room visits at Lillooet's hospital, attributable to skiing-related injuries;
- Lillooet schools could accommodate another 40-60 primary students and 25-30 secondary students (there is no projection of the number of additional students expected if the resort proceeds);
- a satellite police office may be needed at the resort; and there may be measurable increases in traffic enforcement/road accidents and search and rescue needs, and possibly an increase in petty violence;
- if Lillooet grew to more than 5,000 people, municipal cost-sharing of policing costs would become necessary; and
- the volunteer fire department, water supply and sewage disposal systems would require upgrading if Lillooet experiences a significant population increase.

Assuming that 40% of the resort's workforce live in Lillooet over time, the consultants estimated that this could translate into an increase in the Lillooet area population from the projected 5,700 in 2007 to perhaps 7,300 (1,600 more) if the resort proceeds, eventually adding about 5,000 new residents to the area by 2012, in addition to any projected growth of Lillooet without the resort.

Agency Review Comments on Application (6.4.4)

No agency comments were submitted on service delivery issues addressed in NGR's application.

Proponent's Responses to Agency Comments on Application (6.4.4)

Since no agency comments were received, NGR made no further comment on service delivery issues at this time.

Project Report Specifications (6.4.4)

The project committee generally accepted the findings of the report, and did not request that any further information be required in a project report.

Issue Treatment in Proponent's Project Report (6.4.4)

NGR was not requested to, and did not, provide additional information on this issue in its project report.

Agency Review Comments on Project Report (6.4.4)

N/A

Proponent's Responses to Agency Comments on Project Report (6.4.4)

N/A

Additional Issue Consideration (6.4.4)

A. Health and Hospital Services

Refer to section 6.5 (*Health Effects*) for discussion of health and health care issues.

B. School Services

Project development raises the prospect of an increased demand for school facilities. The EAO has consulted the Ministry of Education (MEd) about how increased demand would be accommodated.

Capital Costs - MEd has advised the EAO that, in BC, school boards are responsible, under the *School Act*, for the capital planning of education facilities within their respective districts. School boards are required annually to submit a capital plan which includes funding requests for various capital projects, for approval by the Minister of Education. Treasury Board then allocates the available provincial capital funding to the various social capital ministries, including MEd. The resulting allocation is distributed to school boards for the highest priority capital projects, including the construction of new schools and additions to existing schools to accommodate student enrolment growth. If increased student enrolments are expected in Lillooet as a result of resort development *and* these additional enrolments cannot be accommodated within the existing school inventory of SD No. 74 (Gold Trail), the Gold Trail School Board would be responsible for seeking capital project funding approval in its Five-Year Capital Plan submission with respect to the provision of permanent educational accommodations for those students.

Under recent amendments to the *Municipal Act*, developers are required to pay a 'school site acquisition charge' on individual dwelling units where new schools are needed to meet increased student enrolment created by new residential development in a school district. This charge is to be collected by local government and transferred to school boards. The money collected may only be used to help pay for new school sites. School boards and local governments across the province are just now commencing the required consultations to determine whether school site acquisition charges are required in their school districts to address the need for school sites, as would be created by forecasted residential growth.

Operating Costs - If, as expected, additional school enrolments need to be accommodated for school-age children as a result of resort development, the operational costs will be funded through grants from the province to school districts based on reported enrolment numbers. Operating grants are provided for general instruction and school administration on a per-student basis. Different per-student amounts are set in each school district, using a funding formula which takes into account location, size of district, type of students, etc. The size of grants for bussing, leases and boarding are not computed on a per-student basis, but relate to actual costs incurred by the districts, subject to MEd funding criteria. Operational funding is derived in part from school taxes collected from property owners, but the largest share of BC's education budget originates from the Consolidated Revenue Fund. Where parents elect home schooling or regional correspondence (or distance education) for their children, they bear the costs. There are no requirements to charge the operational costs of public education back to developers.

The project committee is satisfied that normal provincial funding mechanisms for school facilities will be applicable if, as expected, the project's direct and indirect job creation places additional demands on school services.

C. Day-care Facilities

Provision of day-care facilities was not raised as an issue until late in the review, when noted in the St'at'imc social and cumulative impact analysis. Project development raises the prospect of an increased demand for day-care facilities. The EAO has consulted MSDES about how day-care (or child care) services are delivered, and how growing demand would be satisfied.

Government programs - MSDES has responsibility for child care programs delivered by the province, including delivery of child care subsidy payments to qualifying parents/guardians. MSDES's Child Care Policy and Programs' Branches administer Child Care Policy and Programs, and provide numerous grant programs to support the development and maintenance of child care spaces. The Day-care Subsidy is also administered through MSDES. Supported Child Care Programs are administered through the Ministry of Children and Families (MCF). The licensing of child care facilities is the responsibility of MoH. MoH's Medical Health and Licensing Officers are responsible for the administration of the *Community Care Facility Act* and the *Child Care Regulation*, which define the minimum expectations for child care services provided to children and their families in BC, indicate how many children of specified ages may be cared for in family child care and group child care facilities respectively, allowable staff-to-children ratios, and maximum allowable hours of care per day.

MSDES has recently announced a new child care initiative for the 2000/01 year. This child care initiative will be the first modest step towards a publicly-funded child care system. This initiative will begin with funding for before- and after-school care on school sites, for children Grade 1 to Age 12, through grants to the providers. Parents will pay a fee of \$7.00 to \$8.00 per day for before- and after-school care, if their child is attending one of these facilities. There will also be the opportunity for a small expansion of before- and after-school care on school sites through the use of portables and grants from the MSDES to child care providers. This is expected to be part of a long-term strategy towards a publicly-funded child care system, with other child care groups and ages included as budgets permit.

Private sector role - Delivery of child care services is largely a private sector responsibility. Thus, child care service delivery is market-driven. In this area, as in most settings in BC, it is expected that, on the average, about 80% of the costs of child care services would be provided by parents/guardians. Thus, most of the available funding is targeted to parents (rather than to facility operators), to facilitate parent choice. Depending on type of facility, actual child care costs, age of the children, parent income and 'need', the subsidy program could cover up to 100% of a parent/guardian's child care costs.

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There are no standing government policy expectations with respect to the provision of child care facilities by private developers, although many private employers incorporate child care settings into their operations on a voluntary basis, in response to the need expressed by their staff or clients. Should NGR or other parties wish to consider providing group child care facilities, either at the resort or off-site, the facilities must be approved by MoH's Medical Health Officers, as must any facility which provides care to more than two unrelated children. Grants may be provided to assist private operators with the inclusion of group child care centres at the resort. Grant programs include the Wage Supplement Initiative, Infant/Toddler Incentive Grants, Facilities and Equipment Grants, and Emergency Repair and Replacement Grants.

MSDES is currently administering child care support services in each region in the province. Its role is client-driven, and it will provide child care financial assistance to the project's workers on the same basis as to anyone else. MSDES requests that, if the project proceeds, communication be maintained between the resort's management and the MSDES District Office, to allow MSDES staff to be better prepared to meet any incremental demand for its services.

The project committee expects that resort development would lead to increased demand for day-care services, and that normal government financial assistance programs are applicable to day-care costs associated with the project's direct and indirect job creation. Since the actual provision of facilities is not undertaken by government, NGR is encouraged to consider the day-care needs of its own workers, and to ensure that some provision is made for these services at the resort village, and if substantial numbers of workers are expected to commute daily to work, then off-site also.

D. Policing

Project development raises the prospect of an increased demand for policing services. The EAO has consulted MAG about how increased demand would be accommodated.

Allocating resources - MAG has advised that, while there are general government guidelines, the actual ratio of police to population fluctuates considerably around BC for many reasons, not all attributable to crime rates. In determining the need for policing services, the most likely scenario is that the RCMP will adapt to the new project's demands gradually over time, taking account of other local growth factors. Typically, in a situation such as this, the local detachment of the RCMP would assess the potential impact of a project on policing demands on an ongoing basis, and would negotiate any incremental resource requirements, as and when the need arises, through its policing agreements with the province. Police resource planning is not an exact exercise, and judgement will be needed, taking account of actual experience, available resources and competing demands.

Funding - MAG notes that police services for unincorporated settlements of less than 5,000 people are funded by the province under contract with the RCMP. In the case of ski developments, the operators contribute only indirectly, through the regular taxation system, and not through any more direct cost-sharing arrangements. As Lillooet's population expands above 5,000, it will become involved in cost-sharing policing services.

Crime rates - As regards the impact of resort development on crime rates, MAG advises that other resorts in BC and elsewhere in Canada are not associated with unusual crime problems, but sometimes appear to have crime rates which are higher than the national average. MAG notes that such statistics reflect the basis used for Canadian community crime rate calculations, which is misleading for resort and other tourism-based communities. The crime rate is calculated as the ratio of the number of reported crimes to the size of the resident population. Resident population statistics exclude part-time residents, such as tourists, cottage and chalet owners, and seasonal workers, who usually have a permanent residence elsewhere. For example, since Whistler is a resort community for which a significant proportion of its population on any given day consists of visitors and seasonal workers, its apparent crime rate is predictably higher than that for other communities. Thus the crime rate alone is not a reliable indicator of the relative safety of one location over another. In fact, local law enforcement authorities consider Whistler to be a very safe community compared to urban areas or other communities of comparable size. It is not associated with any unusual crime-related problems.

If the project is approved and, once underway, crime-related problems associated with the resort do arise in local communities, it may well be difficult to distinguish those problems from problems which are attributable to other causes. Moreover, experience suggests that it is beyond the capacity of most employers, by themselves, to address and resolve problems of this type.

MAG would appreciate the opportunity to work with NGR to ensure that a sufficient community design focus is placed on protection of the personal safety of area residents and visitors, in keeping with MAG's goal of promoting and preserving the safety of all places in BC where people live, work or visit. MAG does not issue specific standard criteria which proponents are expected to meet in respect of crime prevention issues raised by new development. In this case, as in others, MAG is encouraging the proponent to be proactive and responsible in ensuring that the ski resort is planned and operated in such a manner that prevention of, and responsiveness to, threats to public safety are closely co-ordinated with the local authorities responsible for the provision of policing and emergency management services.

The project committee is satisfied that the province's normal police service resourcing mechanisms will be applicable if, as resort development proceeds, increased demands are placed on local police services.

E. Fire-fighting

The project committee is satisfied that there are no unusual circumstances or special difficulties with respect to the adaptation of Lillooet's fire-fighting capability to accommodate additional residents. It will be up to the District of Lillooet to deal with the issue over time, through forward planning. At the resort itself, more detailed planning can be incorporated into subsequent permitting processes if the project is approved at the conclusion of the EA process.

Public Comments on Issue and Project Committee's Position (6.4.4)

1. PUBLIC COMMENT:

Need to consider implications of resort to local fire and police service demands.

PROJECT COMMITTEE POSITION:

See this section, project committee comments on the provision of increased policing (D) and fire-fighting (E) services if the resort proceeds.

First Nations Comments on Issue and Project Committee's Position (6.4.4)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort* (undated).

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. An April 7, 2000 letter from Chief Mike Leach, on behalf of St'at'imc Chiefs, reaffirmed that the study is considered a draft which may need further work, once the *Cultural Heritage Study Final Report* is completed.

A. Emergency Health and Ambulance Service

Refer to Section 6.5 (*Health Issues*) for a discussion of health and health care effects.

B. Day-care Services

Part I of the report addressed the social and cumulative impacts of the resort development on the eleven St'at'imc communities. Day-care issues were mentioned in the Education, Daycare and Employment Development section of the report.

1. FIRST NATIONS ISSUE:

Some St'at'imc communities operate their own day-care facilities. The report made the following recommendation:

- Once a St'at'imc Day-care Co-ordinator is in place, consider how the long-term day-care facility and staff needs should be addressed to respond to increased First Nations employment outside St'at'imc communities (i.e. at the proposed resort).

PROPOSER RESPONSE:

NGR supports and agrees with the day-care goals, objectives and recommendations outlined in the Education, Day-care and Employment Development section of the report. NGR suggests that employee day-care programs and societies would be best developed within existing communities (e.g. Lillooet or Mount Currie). NGR is committed to discussing financing issues with other government agencies and with First Nations communities. NGR's portion of any funding would come from the St'at'imc fees which NGR is prepared to pay to St'at'imc in recognition of their land rights, as well as St'at'imc support for the project.

PROJECT COMMITTEE POSITION:

MSDES has advised the project committee that it provides financial assistance to employees in BC on a common basis, irrespective of cultural heritage. Thus, St'at'imc workers are eligible for all of the programs which are available to the community at large. Proposals for First Nations day-care facilities to be located on-reserve would follow the same approval process as for any off-reserve applicant. If a person who lives on-reserve is receiving federal social assistance, and wishes to place their child in a day-care facility, the provincial subsidy would be calculated on the applicant's income, notwithstanding whether the day-care facility was located on or off of the reserve. With respect to the financing of day-care facilities, NGR has indicated a commitment to discuss day-care financing issues with other government agencies and with First Nations communities.

C. Police Services

1. FIRST NATIONS ISSUES:

The report noted that certain essential services could be delivered at the resort by the St'at'imc, such as policing. The report made the following recommendations:

- Consider whether or not police and law enforcement responsibilities should be assigned to the St'at'imx Tribal Police. The St'at'imx Tribal Police Force is governed by an independent Board. Estimates should be developed by the Tribal Police staff as to expected personnel and vehicle costs associated with increased traffic enforcement in the gateway territories (Cayoosh and Lillooet).
- The St'at'imc Chiefs, in consultation with the St'at'imx Tribal Police Governing Board, should make a strategic decision as to whether police services for the proposed resort fall under its jurisdiction. If so, then to address this mandate, the St'at'imc Tribal Police should develop an estimate of vehicle, personnel, communications, and facility development (both office and housing) needs, and expected phasing of expenditures consistent with the resort's development plan.

PROPOSER RESPONSE:

The Tribal Policing recommendations will require further review. There may be options for Tribal police or Tribal police employees to provide security on a contract basis within the resort area. However, the legal basis for having Tribal Police managing the resort is unclear to NGR. NGR wishes to have provincial direction on this issue. NGR is willing to investigate this possibility if the province and the RCMP/Tribal Police believe that such an approach is legal and achievable.

PROJECT COMMITTEE POSITION:

The project committee has been advised by MAG that, in this case, the RCMP are the Provincial Police Force with jurisdiction, except in respect of reserve lands of the St'at'imc Nation. The St'at'imx Tribal Police Service is established under section 4.1 of the Police Act as the provincial policing jurisdiction for ten of the eleven St'at'imc communities (all communities except Bridge River). The proposed resort is a considerable distance from the nearest St'at'imc Reserve lands, and is expected to

remain under the jurisdiction of the Lillooet RCMP detachment. It is not clear under what circumstances this situation would change, except possibly in the context of a treaty settlement, if the resort area were deemed to be 'settlement lands'.

Proponent's Commitments Relevant to Issue (6.4.4)

The proponent has committed to:

- discuss day-care financing issues with other government agencies and with First Nations communities.

Status of Issue at Time of Referral to Ministers (6.4.4)

The project committee has concluded that there are no outstanding service delivery issues affecting the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Service delivery effects* – Provincial and local providers of services such as health, education, police, day-care, fire-fighting and social assistance have advised the project committee that mechanisms are in place to respond to fluctuating or increased demand for services in the area as resort operations expand. No strategic concerns were identified in this regard, and service delivery will continue to be sustainable as resort-related demands for services increase.

6.4.5 COMMUNITY STABILITY EFFECTS
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Issue(s) (6.4.5)

The primary issue was to evaluate whether or not resort development, on balance, would have a stabilising or destabilising effect on local communities.

Content of Application (6.4.5)

The January 1996 Urbanics/Landscape consulting report focused on Lillooet. It described Lillooet as a mature community with an economy which is currently based on its natural resource base, and which is concerned about its future. It noted that a Community Resources Board had been set up to help residents to achieve some measure of control over their future resource base, and that one key focus would be the tourism opportunities offered by its land base. The District of Lillooet, through its Economic Development Office, is actively promoting tourism and economic diversity. The community has a developed infrastructure, and a surplus of underemployed and unemployed residents, and is in the process of evolving from a resource-based economy towards a more diversified economy.

Based on four community focus groups, the report noted that the overall attitude of residents to the development was generally positive, but that there were also concerns. In terms of benefits, the report noted:

- more jobs;
- employment opportunities;

- business opportunities;
- rounding out the tourism season;
- greater community stability;
- improved tax base;
- improved local services;
- a place for youth to go; and
- family recreation opportunities.

The greatest disadvantages associated with resort development were seen as:

- rapid population growth;
- unorganized growth;
- increased crime and vandalism;
- increased cost of living;
- most new jobs low-paying;
- greater gap between high-income and low-income people;
- demands on community infrastructure; and
- environmental effects, such as the alienation of wildlife.

According to the report, the distance of the resort from Lillooet will mean that both beneficial and adverse effects will be muted somewhat. Nonetheless, community change is anticipated, and over time, comprehensive community planning will be needed to ensure that there is an appropriate balance between the needs of residents and visitors.

Agency Review Comments on Application (6.4.5)

The project committee generally concurred with the consultant assessment of the overall effects of resort development on the community. The identified pros and cons were consistent with those elicited from local residents during public meetings and in written submissions on NGR's application.

Proponent's Responses to Agency Comments on Application (6.4.5)

No specific agency comments were submitted, so that NGR provided no additional input at this time.

Project Report Specifications (6.4.5)

The project committee did not seek further information in the project report.

Issue Treatment in Proponent's Project Report (6.4.5)

None.

Agency Review Comments on Project Report (6.4.5)

N/A

Proponent's Responses to Agency Comments on Project Report (6.4.5)

N/A

Additional Issue Consideration (6.4.5)

In the project committee's view, most of the socio-economic impacts associated with the project appear to be positive (e.g. employment generation, income generation and economic diversification), such that overall, the proposed Melvin Creek/Cayoosh resort development should enhance community stability. Employment opportunities will range from unskilled to technical jobs. The increase in recreation opportunities will provide residents with more choices and make the area a more attractive place to live. Residents will have increased opportunities for employment, and will no longer have to leave the area to find a job or else rely on social assistance. A reduction of the local BC Benefits caseload as a result of this project is likely, particularly if NGR maintains a good working relationship with the local BC Benefits office.

In recent years, Pemberton has benefited economically from the growth in activity at Whistler. Lillooet, on the other hand, is still primarily dependent on forestry, with a high percentage of the population dependent on income assistance (approximately 12%), together with a low percentage of high school graduates (between 40% and 60% have not completed high school). The proposed resort has the potential to offer the community of Lillooet an opportunity to reduce its dependency on forestry, diversify into other areas, improve worker skills and enhance educational opportunities. For Pemberton, the resort offers the opportunity for many residents to build on the skills and developments originally fostered by Whistler's evolution.

The February 2000 Bridges study examined the potential impacts of the resort proposal on nearby communities. The report considered such factors as municipal service requirements, policing, health care, recreation (other than skiing), library and educational services. The report pointed out that, as the population of the resort increases, more community services would be required, both potentially creating jobs for local residents and expanding services provided to the community. For example, the pool, hot tub and sauna at the Lillooet recreation centre are currently closed during the winter months due to a shortage of operating funds. If the resort proceeds, there may be an opportunity to keep these facilities open year-round.

The Bridges report provides several recommendations for strategies by means of which the community can maximize local employment opportunities and related benefits. If the report recommendations are acted upon, local communities and residents stand to gain considerably. NGR should make every effort to work with local communities to enable residents, businesses and local governments to maximize benefits.

It is unlikely that the local community will be capable of filling all of the jobs, and in-migration of job-seekers will also occur, which can create problems, as demonstrated by experience in nearby ski resort communities. In most ski resorts, some jobs require that employees be available on-site at the start of the ski season. In some cases, MSDES field staff report that local community services experience noticeable additional demand during the fall, when young adults and youths arrive from out of the local area to seek employment. If adequate snow cover is late in arriving, in-migrating workers may wait locally for the season to start, while on Employment Assistance or other form of social assistance (e.g. security deposits for housing). If a season is late-starting, this in-migration can cause some disruption in the community.

To mitigate this potential, and to enhance the generally positive employment-related effects of this project in the local communities, it is important that NGR initiate and maintain contact with the local Human Resource Centre and the BC Benefits Employment and Benefits Centre administration. MSDES also recommends that NGR advise MSDES when recruitment is taking place, so that MSDES is prepared for any influx of out-of-town people who are seeking work. BC Benefits is a statutory government obligation, and MSDES service delivery for this service is client-driven, and is automatically funded. MSDES must be prepared to respond to BC Benefits demands as and when they arise anywhere in the province, hence its interest in developing an ongoing relationship with the proponent.

It is worth noting that the province has negotiated with the federal government for the co-management of employment programming for the unemployed, as well as Income Assistance clients. Under the Labour Market Development Agreement (LMDA), signed (for Canada) by HRDC, and (for the province) by what is now MSDES, MSDES, because of its interest in the pre-hiring of Income Assistance recipients, becomes a full participant in the management of programs under the LMDA. MSDES is responsible for labour market attachment programming, offering facilitation services aimed at bringing clients into contact with potential employers with an appropriate hiring policy. The proponent may wish to consider participating in the labour market attachment program, once resort development is underway. MSDES, because of its awareness of the project, is also in a position to advise existing and potential clients to contact the proponent about potential employment opportunities.

Other parts of section 6.4 (*Social and Economic Effects*) address other specific resort-related issues which can have a significant bearing on community stability (e.g. accommodation, education, health care, policing, other service delivery and traffic impacts). The actions taken by the communities to cope with these changes will be very important. In most resort communities, unemployment and major crime are both low. The growth and change that this resort will create in local communities will not be welcome by all residents. Most people in the nearby communities are currently supportive of the proposed resort. If NGR works closely with local communities, it should be possible to manage community growth and adjustment, and minimize any negative disruption experienced by current residents if the resort proceeds.

Public Comments on Issue and Project Committee's Position (6.4.5)

1. PUBLIC COMMENT:

Resort will not be viable without nearby population to support it.

PROJECT COMMITTEE POSITION:

Based on independent feasibility studies commissioned for the EA process, the project committee is satisfied that the resort, as proposed, could be financially viable. Some of the factors considered in the feasibility analyses include client base and target markets – see also section 5.8 (*Project Feasibility*).

2. PUBLIC COMMENT:

Most direct impact will be on residents of D'Arcy - not those of Pemberton or Lillooet.

PROJECT COMMITTEE POSITION:

The studies undertaken for the EA process indicate that the resort development will have the greatest impact on the communities of Lillooet and Pemberton. The project committee is satisfied that the project would have an overall positive impact on adjacent communities.

3. PUBLIC COMMENT:

The resort will provide economic stability for Lillooet

PROJECT COMMITTEE POSITION:

The economic effects of the resort project are expected to be generally beneficial to local communities, contributing to their overall stability, although some potential problems (such as managing population growth and providing for in-migrating workers) will need to be effectively addressed by the communities in question - see discussion above, and also in sections 6.4.1 (*Employment Effects*) and 6.4.2 (*Investment, Income and Expenditure Effects*).

First Nations Comments on Issue and Project Committee's Position (6.4.5)

A. Community Development Issues

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort* (undated).

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. An April 7, 2000 letter from Chief Mike Leach, on behalf of St'at'imc Chiefs, reaffirmed that the study is considered a draft which may need further work, once the *Cultural Heritage Study Final Report* is completed.

Part I of the report addressed the social and cumulative impacts of the resort development on the eleven St'at'imc communities. Community development/stability issues were included in the discussion.

1. FIRST NATIONS ISSUES:

The report noted that each St'at'imc community has both short-term and long-term development initiatives or projects underway. It is important, due to the size of the proposed resort development, that it does not divert attention from existing community-based First Nations priorities. It is also important that the St'at'imc continue to take a diversified approach to development. For southern communities, this would include forestry-related and other resource sector initiatives. For the northern St'at'imc communities, efforts to expand First Nations ownership and employment participation in the forest sector will need to be pursued. Funded efforts

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such as the St'at'imc Hydro Project Impact Assessment will provide further recommendations for strategic training, economic diversification, and small business development.

The St'at'imc report made the following recommendations:

- seek funds so that each of the eleven St'at'imc communities, if they choose to do so, can obtain the staff and technical resources necessary to update existing Physical Development Plans and Community Development Strategies to address local economic and social impacts arising from the resort development; and
- integrate new training and economic development initiatives with efforts that will arise from the St'at'imc Hydro Project Assessment.

PROPOSER RESPONSE:

NGR agrees with these recommendations and believes that they are reasonable. NGR is willing to participate in any reviews to update St'at'imc community development plans.

PROJECT COMMITTEE POSITION:

The project committee is aware that St'at'imc Chiefs had indicated a desire to engage the province in 'bilateral' discussions on various matters of importance to them, including economic issues.

The province has indicated its willingness to do so, and also that this is a matter to be dealt with by NGR in its negotiations with St'at'imc. The province is willing to explore ways of assisting First Nations with their development plans. St'at'imc concerns of this nature could be referred to relevant government programs which may be able to assist. It would help to have a clearer indication of the nature of the community development initiatives in question, since with this information, a more reliable determination of appropriate programming (and funding availability) could be made. For example, MCDCV administers various community-oriented programs which are part of the province's overall strategic commitment to encourage greater economic diversification in coastal and rural resource-based communities, support the voluntary and co-operatives sector, and assist disadvantaged youth to develop marketable skills. In support of this, MCDCV administers community-oriented programs which include:

- Community Solutions
- Community Enterprise
- Coop Advantage
- InVOlve BC (only community development corporations or societies are eligible)
- Bladerunners

First Nations communities are eligible for these programs.

The federal government should also be approached, given Canada's on-reserve jurisdiction, economic development and employment and training programs, and funding targeted for First Nations. One example of a particular federal funding source which may be of interest to the St'at'imc Nation is the recently-announced

program of Indian and Northern Affairs Canada to provide \$75 million in funding to facilitate greater First Nations participation in major regional development initiatives. Supporting funds will also be provided for partnerships in regional economic development projects, such as economic infrastructure and resource developments, intended to spur increased collaboration with the private sector and other levels of government.

If St'at'imc communities are interested in these and similar provincial and federal programs, the province can arrange for further information to be provided.

Proponent's Commitments Relevant to Issue (6.4.5)

The proponent has committed to:

- initiate and maintain a working relationship with the local Human Resource Centre and the BC Benefits Employment and Benefits Centre administration in order to minimize the negative effects of the project and maximize its positive effects on the stability of local communities; and
- participate in any reviews to update St'at'imc community development plans, if invited by St'at'imc Bands.

Status of Issue at Time of Referral to Ministers (6.4.5)

The project committee is satisfied with the level of analysis of community stability issues for EA review purposes. As noted in section 8.3 with respect to sustainability issues:

- *Community stability effects* – The resort would bring change locally, and there will be both beneficial and adverse effects on local communities, especially Lillooet, if the resort proceeds. The project committee concurs with the view of most local residents that, on balance, given its job creation and regional income contributions to the economy, the resort should have a stabilizing influence on communities which have recently suffered from a local decline in forest sector activity.

6.4.6 REGIONAL TRAFFIC EFFECTS

Issue(s) (6.4.6)

This issue concerned the need to review and analyse traffic volume impacts and highway inventory information for all routes leading to the resort area.

Content of Application (6.4.6)

NGR's application did not specifically address the potential regional traffic effects of the proposed resort development.

Agency Review Comments on Application (6.4.6)

In its February 24, 1997 letter, MoTH noted a lack of information in the application regarding the potential impact of the proposed resort on Highway #99. Specifically, MoTH queried whether the resort would necessitate required improvements to Highway #99 or any other transportation infrastructure improvements, and their costs. In order to

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address these issues, MoTH requested that NGR complete a traffic impact study for Highway #99 from Horseshoe Bay to Lillooet. MoTH included its *Terms of Reference for a Traffic Impact Study* (1996) document to guide NGR when undertaking the study.

In its April 15, 1997 letter, MoTH reiterated its outstanding concerns with respect to the proposed resort, and noted the need to identify any potential improvements to Highway #99 or other transportation infrastructure that would result from the development of the resort. MoTH noted that confirmation of traffic volumes, peak periods and types of traffic would be necessary to determine the required improvements. MoTH supplemented the general terms of reference document attached to its February 24, 1997 letter with more specific requirements for the traffic impact study.

In its March 4, 1997 letter, Whistler outlined its concerns with the potential transportation impacts of resort development. Whistler noted that a certain proportion of traffic to the Melvin Creek/Cayoosh resort would travel via Highway #99 and thus, through Whistler. It suggested that the potential traffic volumes through and from Whistler should be identified and, if necessary, mitigation measures proposed.

The District of Squamish outlined its concerns with respect to regional traffic impacts in its February 20, 1997 letter. It noted that the resort would increase traffic levels along Highway #99, and suggested that, as a result, Squamish would be faced with more restrictions on development. Consequently, it requested that the impacts to Squamish from increased Highway #99 traffic be assessed.

Proponent's Responses to Agency Comments on Application (6.4.6)

On May 15, 1997, NGR provided a response to MoTH's concerns, and included an April 6, 1997 report, referred to as *Cayoosh Resort Preliminary Visitor Analysis*. In the letter response to MoTH, NGR indicated that it would review an ongoing traffic flow analysis for Highway #99 currently being undertaken by Whistler. NGR also clarified that it was not requesting any additional improvements to Highway #99 in order to accommodate increased traffic related to resort development. NGR stated that the existing one-lane bridges and winter service would provide an adequate level of service to the resort.

The *Preliminary Visitor Analysis* report provided an overview-level analysis of current Highway #99 traffic levels, and described the potential impacts on traffic volumes associated with the anticipated types and numbers of visitors to the proposed resort. The report noted that the travelling patterns of different skier 'types' is quite distinct. Due to the travel time, most 'destination' skiers would arrive at the resort in late afternoon or evening, and ski the following day. Thus, they would not be on the highway during the same peak periods as Vancouver-based 'day' skiers who typically travel to Whistler in the early morning and returning at night. Further, NGR commented that, due to its much smaller size, its distance from Vancouver, and the 'destination' nature of the resort, its greatest impact with respect to traffic on Highway #99 would be north of Whistler, and that, at build-out, this impact would be well below present peak summer volumes.

Potential impacts on Highway #99 traffic were also discussed in NGR's response to Squamish, dated April 10, 1997. NGR again noted that the traffic impacts would be lessened, since destination skiers tend not to travel during peak traffic periods. Specifically addressing the concern that increased traffic volumes could restrict development in Squamish, NGR suggested that regional traffic growth was a much broader issue than the incremental increase prompted by development of the Melvin Creek/Cayoosh resort. NGR expressed its view that commercial development along tourism routes needed to be carefully planned in order to avoid negatively impacting the community and local businesses.

NGR provided a response to Whistler's concerns on April 23, 1997. The response essentially reiterated the discussion and conclusions regarding traffic impacts along Highway #99 which were outlined in the April 6, 1997 *Preliminary Visitor Analysis*.

Project Report Specifications (6.4.6)

In specification E.3(B)#1, NGR was required to further discuss its April 6, 1997 document, *Cayoosh Resort Preliminary Visitor Analysis*, with MoTH as it related to the design criteria for the route study (see section 6.1.2.1). Those discussions were to focus on the general scope of resort development, with the intent of confirming base assumptions related to traffic volumes, design vehicles and design hour volumes, which would form the basis of the design assumptions for the access road.

Issue Treatment in Proponent's Project Report (6.4.6)

NGR included a report by Reid Crowther & Partners Ltd. (Reid Crowther), entitled *Cayoosh Resort Traffic Assessment*, in section 8 of the project report. This report provided trip generation estimates for the resort, and investigated the traffic impact of resort-generated traffic on Highway #99 and nearby communities. The traffic generated by the proposed resort for each of its first 10 years of operation was estimated, using forecasted skier visits, plus assumptions about visits per skier, auto and bus occupancies, and mode, time and direction of travel. A capacity analysis was conducted for key intersections in each of the communities, using Year 10 winter peak hour traffic from the resort, superimposed on Year 10 background traffic. The only potential problem which could be attributed to the proposed resort was identified in Pemberton, where southbound traffic from the resort could cause delays for northbound traffic turning left. Since this problem would have a minimal impact, due to its limited duration (i.e. 20 to 30 days per year), no mitigation was recommended. No operational deficiencies related to resort traffic were identified at the intersections analysed in Lillooet, Whistler, and Squamish.

Agency Review Comments on Project Report (6.4.6)

In an October 15, 1999 letter, MoTH indicated that it was satisfied with the information provided in the project report. MoTH noted that further incremental improvements to Highway #99 might be required in the future to meet increased traffic needs, but that those improvements would not be solely attributable to the proposed resort development. Making reference to Figure 3.7 of the *Cayoosh Resort Traffic Assessment*, MoTH further noted that anticipated total winter traffic volumes at build-out are not likely to exceed summer daily peak volumes on the Duffey Lake Road (Highway #99) south of the resort.

Squamish cited continuing concerns with respect to regional traffic impacts in its September 8, 1999 correspondence. It noted that, contrary to the conclusions of the Reid Crowther report, the Highway #99 corridor through Squamish was already experiencing major traffic problems during peak periods. This, Squamish noted, resulted in pollution, community dissatisfaction, and the perception of Squamish as a 'drive-thru' community. Squamish further commented that, although MoTH was undertaking a Highway #99 Corridor Strategy, it would not address peak flows through the community, beautification along the highway, pollution and other community concerns.

Proponent's Responses to Agency Comments on Project Report (6.4.6)

NGR responded to Squamish in its October 26, 1999 letter. In it, NGR noted that the current traffic-related problems being experienced by Squamish were not inconsistent with the conclusions of the Reid Crowther report. The report indicated that the additional visitor traffic on Highway #99 between Vancouver and Whistler would be extremely low when compared to existing traffic volumes. Although there would be more traffic, the volumes would be small, and would occur outside peak periods, hence, the incremental impact to the traffic-related problems in Squamish would be minimal.

Additional Issue Consideration (6.4.6)

NGR's responses to agency comments on its traffic analysis were deemed acceptable, and no further concerns were raised.

Public Comments on Issue and Project Committee's Position (6.4.6)

1. PUBLIC COMMENT:

Existing uses of Duffey Lake Road should be addressed.

PROJECT COMMITTEE POSITION:

MoTH has identified Highway #99 (Duffey Lake Road) as a primary highway within the province recognising the importance of this transportation route. Besides serving communities along the highway (e.g. Lillooet), it provides an alternative route between the Lower Mainland and the BC interior. As with any other public highway in the province, there are three general types of traffic on the highway: (1) local traffic (near communities); (2) regional traffic (between communities - examples may include commuters between Squamish and Vancouver); and (3) long-distance trips for motorists travelling across regions or across the province. In addition, the highway provides access to adjacent lands to serve various sectors of the economy (e.g. the forest industry). This is a public route, and different users use the highway for different reasons. NGR's traffic analyses, coupled with existing MoTH traffic data, were deemed sufficient for EA review purposes.

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2. PUBLIC COMMENT:

Duffey Lake Road is inadequate to handle future traffic demand. Need to assess upgrading requirements for this road (e.g. two-laning of bridges, straightening of winding sections, etc.).

PROJECT COMMITTEE POSITION:

Future general growth in background traffic on Highway #99 would outweigh any traffic effects to Highway #99 generated by the proposed resort. Projected future traffic volumes north of Whistler to Highway #97 can be accommodated by a two-lane facility with incremental safety, mobility and infrastructure improvements, such as minor curve straightening, addition of passing or climbing lanes, and replacement of bridges or pavement resurfacing. The general long-term vision for upgrading Highway #99 is now under consideration as part of the Highway #99 Corridor Management Plan. It is recognised that some improvements to Highway #99 may be warranted, and will be evaluated in relation to overall provincial priorities and available funding considerations.

3. PUBLIC COMMENT:

MoTH should find a way to segregate commercial and tourist traffic on Highways #1 and #99 during the mid-summer tourist season.

PROJECT COMMITTEE POSITION:

Highways #1 and #99 are provincial transportation routes and public roadways of major regional economic importance, providing access for both tourists and commercial traffic. In many cases, there are no practicable alternatives to the use of these highways to move people and goods, which is critical to the economic well-being of communities along them. Currently, there are no restrictions on the type of traffic which are permitted to use these highways. It would be impracticable, and likely strongly opposed locally, to restrict use of Highway #1 or Highway #99 to certain types of traffic.

4. PUBLIC COMMENT:

Increased traffic on Highway #1 will be economically beneficial.

PROJECT COMMITTEE POSITION:

The reasoning behind this point is not clear. If the intent is to anticipate benefits for the area around the Cayoosh resort, this may be possible, but it is difficult to predict. Generally, a community or development would be most likely to benefit measurably from increased traffic if it is located directly along a particular route. For example, Lillooet may benefit economically from increased tourism traffic along Highway #99.

5. PUBLIC COMMENT:

Concerned with increased congestion between Vancouver and Whistler.

PROJECT COMMITTEE POSITION:

MoTH has advised the project committee that it is also concerned about congestion between these two communities, and is currently reviewing the problem. Rugged terrain along Highway #99 makes upgrading difficult and costly. A number of

potential solutions to the traffic congestion problem are currently being assessed, including highway, rail and marine alternatives. Regarding the proposed resort, the traffic analysis indicates that resort-related traffic would have a negligible effect on the operation of Highway #99, since day trips would be limited, due to the travel distance from Vancouver, and the majority of long-distance destination trips would occur outside peak hours on Highway #99. This is a reflection of airline schedules, shuttle bus operation and travel behaviour to and from the resort.

6. PUBLIC COMMENT:

Increased traffic will result in increased accidents, human injuries and deaths.

PROJECT COMMITTEE POSITION:

MoTH advised the project committee that the number of accidents along a highway depend upon various factors, including: type of facility, roadway alignment, volume of traffic, driver behaviour and other environmental factors. In BC, during the period 1989 to 1993, more than 45% of all accidents on provincial highways were related to human action or condition. Accident rates and numbers of fatalities vary by highway, and routes with high traffic volumes do not necessarily have correspondingly high accident rates. Contiguous sections along one highway with similar traffic volumes may have different accident rates, due to the variables mentioned previously. The main safety concern of MoTH is the cause of accidents, and to determine what engineering improvements can be made to mitigate safety. Engineering solutions are only one solution to problems - enforcement of traffic laws and education of the travelling public are the other two factors. In the case of Highway #99, as noted in response to item #2 (above), MoTH recognises that there is a need to plan for upgrading to respond to the general regional growth in traffic volumes, of which resort-related traffic would constitute only a relatively modest proportion.

7. PUBLIC COMMENT:

Project-related upgrades to Highway #99 will cause impacts to wildlife and taxpayers.

PROJECT COMMITTEE POSITION:

Based upon recent MoTH forecasts for the Highway #99 Corridor Plan, regional traffic volumes will essentially double over a 25-year horizon. These forecasted volumes include the effects of the proposed resort, as well as other factors in regional traffic growth. MoTH has advised the project committee that significant wildlife habitat impacts could occur if major realignments of Highway #99 were built. The current intent, however, is to undertake incremental improvements within the existing corridor. According to MoTH records, 20 wildlife vehicle collisions (2 bear black bear and 18 deer) occurred on Highway #99 between Mount Currie and Lillooet from 1991 to 1999. Although these numbers are only approximate, they are relatively low, and there is not expected to be a significant change in the level of wildlife/vehicle conflict. The steep terrain and location of feeding/grazing areas relative to Highway #99 support the view that the significance of impacts on wildlife from highway traffic will not increase significantly over time. MELP has indicated that it would work with MoTH to address and mitigate any future identified impacts on wildlife associated with increased use of Highway #99. Where improvements are

warranted, costs and impacts would be evaluated and assessed on a case-by-case basis. For proposed improvements (e.g. a climbing lane), MoTH is committed to public consultation, which it usually conducts at the design stage, involving local and provincial government agencies, as well as non-governmental stakeholders and the general public. Consultations normally occur after an initial design (or design concept) is developed, so that impacts can be adequately assessed at an early planning stage. From the perspective of the taxpayer, decisions to implement highway improvements are subject to available funding and government priorities. The BC Transportation Financing Authority requires that analyses be undertaken on capital projects to show that economic benefits outweigh costs. Benefits which are measured include safety, mobility and cost effectiveness.

First Nations Comments on Issue and Project Committee's Position (6.4.6)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *St'at'imc Impact Assessment Study - Proposed Cayoosh Resort - Comments on Transportation and Infrastructure Issues*, prepared by UMA Engineering.

Note - On advice from St'at'imc legal counsel, the study, when received, was initially treated as a draft, since it had not then been approved for release by the St'at'imc Chiefs. However, in a letter dated April 7, 2000, St'at'imc confirmed that St'at'imc Chiefs had approved the report, which is now considered final.

The second section of the report evaluated, from the perspective of the St'at'imc communities, the impacts of increased traffic generated by the resort development.

1. FIRST NATIONS ISSUE:

The report noted that the traffic projections provided in the project report appeared reasonable. It also noted that the two St'at'imc communities which would be affected by increased traffic volumes along Highway #99 would be Mount Currie and Cayoose. The issues raised by these communities concern the impact of increased vehicular traffic on non-vehicular background traffic, and the general increase in traffic throughout the day over present levels. There was concern that an increase in traffic from the resort would have a detrimental effect on non-vehicular movements (by pedestrians, cyclists, horseback riders, etc.). In order to address this concern, the report recommended that an additional study take place to quantify the impact of the resort traffic on non-vehicular traffic in both the Mount Currie and Cayoose communities. The study should assess traffic throughout the day, and not be confined to the resort's peak hours, and should include the impacts of construction-related traffic during project development.

PROPONENT RESPONSE:

If the resort proceeds, the daytime traffic volumes along Highway #99 will be slightly increased from the existing average volume flows during the winter months. Present volumes are on average 30 to 40 vehicles per hour, and with the resort, an additional 20 to 30 vehicles per hour may pass through during the non-peak period. These traffic volumes should be well below the Year 10 peak hourly volumes of 329 vehicles southbound and 173 vehicles northbound, but more than the existing 30 vehicles per hour. Presumably MoTH will address the issue of non-vehicular traffic

in both Mount Currie and Cayoose, with sidewalks required as the resort traffic develops. Construction-related traffic would most likely impact the Cayoose Reserve. In terms of construction materials, it is anticipated that a concrete plant will be established near the resort area, thus avoiding the need to route heavy construction trucks through both Mount Currie and Cayoose. However, building material will be delivered through both the communities (mostly from Lillooet) during the summer and fall seasons.

PROJECT COMMITTEE POSITION:

UMA's technical assessment appears to be reasonable, other than that the traffic effects of the resort relate to spreading of the daily traffic peak from the summer months over the entire year. Summer peaking characteristics relate more to tourism traffic and background traffic on Highway #99, while winter traffic is more a reflection of traffic from the resort. Furthermore, the year 10 traffic forecasts on Highway #99 through Mount Currie could be handled with a two-lane roadway. If non-vehicular traffic is an issue for the First Nations communities, a further study of this issue could be undertaken with MoTH. However, traffic impacts on the communities would not be caused solely by the resort. Normal background growth in traffic, even without the resort, will result in summer traffic volumes by year 10 which could be great enough to be of concern to First Nations, based on points raised in the UMA report. Solutions considered to mitigate impacts on non-vehicular traffic (i.e. pedestrians, bicycles, horseback riders) may include separation of the roadway from other paths or non-vehicular locations. Given the relatively narrow roadway width through portions of the First Nations communities, this type of solution may only be achievable with the acquisition of additional property adjacent to the roadway, which would also have an impact on First Nations, as pointed out on page 11 of the report.

2. FIRST NATIONS ISSUE:

The report raised an issue with respect to the timing of improvements to the Duffey Lake Road. Concern was expressed that, in the absence of a firm budget and schedule, the improvements may lag behind the demand placed on the road by the resort development. In order to address this, the report noted the need for a firm commitment to provide improvements to the Duffey Lake Road no later than when warranted by resort traffic.

PROPONENT RESPONSE:

This is a MoTH issue. It is anticipated that improvements will be made to the Duffey Lake Road as the existing summer peak traffic warrants. It is the summer traffic which will determine the need for improvements, since as the winter traffic volumes are well below anticipated summer volumes.

PROJECT COMMITTEE POSITION:

The province will work with all levels of government to determine improvements required to meet future traffic volumes on Highway #99. Improvements are needed to meet the general regional growth of traffic – the resort proposal, by itself, is not prompting the need for those improvements. Implementation of any roadway improvements are subject to provincial priorities and funding availability.

3. FIRST NATIONS ISSUE:

The communities of Skatin, Xa'xtsa and Samahquam raised concerns about potential improvements to the Harrison Lake route. These communities are aware of archaeological studies of gravel pit prospects along the Harrison Lake/Lillooet Lake corridor. The report recommended that, if plans to improve this route are approved, the province should consult in detail with these three communities, and traffic studies should be undertaken to examine the impacts of such improvements.

PROPONENT RESPONSE:

NGR is not aware of any such plans by the province. Such plans are not proposed for purposes of NGR's resort proposal. It is hoped that the province would consult with Bands, and that the Bands would be involved in planning for such a major undertaking.

PROJECT COMMITTEE POSITION:

This issue is not directly relevant to the EA review of the Melvin Creek/Cayoosh resort proposal, but the project committee has received feedback from MoTH. It is acknowledged that the province has undertaken some investigation of an alternative route from Harrison Mills to Highway #99, in order to accommodate information requests from the treaty process in this area. Planning analysis of this and other route alternatives around the province is no indication that the province is committed to construction of such a route, and at the present, there are no plans to proceed with this route. In the past, MoTH has acknowledged that significant consultation with First Nations has yet to take place. If the project were to be seriously considered, there would be consultation both before and after any decision to proceed.

Proponent's Commitments Relevant to Issue (6.4.6)

None with respect to this issue.

Status of Issue at Time of Referral to Ministers (6.4.6)

The project committee considers the issue resolved for the purposes of EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Transportation/traffic effects* - Highway #99 is currently able to accommodate the anticipated traffic from the resort, which is not a major factor prompting the need for expect for highway upgrading. Summer traffic today exceeds projected winter resort traffic volumes at full build-out. Normal background traffic on Highway #99 over the next 10 years is expected to warrant incremental improvements, such as the addition of passing or climbing lanes, etc. to accommodate traffic needs. Further analysis of these improvements will be considered in the context of regional corridor needs along Highway #99, rather than as improvements solely associated with resort traffic. Road improvements are subject to provincial funding priorities.

6.5 HEALTH ISSUES

Issue(s) (6.5)

Issues pertain to the potential effects of the project on public health and safety during all phases of development, including:

- impacts on health services and hospitals in the local area;
- the need for first aid facilities at the resort;
- implications of resort development for ambulance services;
- general emergency planning issues;
- search and rescue issues; and
- the potential for social health problems such as substance abuse and sexually transmitted diseases at the new resort community.

Content of Application (6.5)

The 1996 Urbanics Consultants Ltd. report, *Socioeconomic Impact Study* was included in section 16 of the application. The report briefly discussed the potential positive and negative impacts of the proposed resort development to local health care facilities. It predicted an increase in emergency room visits directly related to ski injuries and an overall increase in demand for local medical services resulting from the growth in local population. The report noted that an increased demand for medical services could help retain specialists in the area which would not otherwise be supported by the local population.

Agency Review Comments on Application (6.5)

MoH reviewed the application and raised several health-related issues in its February 25, 1997 letter. The major health-related issue associated with the construction phase of the project was the need to clarify the type of worker housing proposed (e.g. construction camp or local community housing). If a construction camp would be used, MoH requested further information, including: maximum size of construction workforce; quantity and source of potable water; type of sewage disposal system; details of food preparation facilities and waste disposal facilities; and, emergency preparedness planning.

MoH also indicated concerns with respect to the operational phase of the resort. A number of those concerns pertained to the need for further information about certain aspects of the resort development including: public safety; swimming facilities; substance abuse; STD's; day care services; and the effects on regional health care services. Other issues raised by MoH (sewage disposal; domestic water supply; waste disposal; stormwater drainage, and air quality), have already been described in previous sections of this report and will not be repeated here.

Proponent's Responses to Agency Comments on Application (6.5)

NGR responded to MoH concerns in its May 8, 1997 letter. First, NGR confirmed that it did not plan to use construction camps during any phase of project development. Instead, it anticipated utilizing the workforce already living in Lillooet and the Pemberton valley. Regarding pools, NGR intended to keep pool development the responsibility of

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individual property developers. NGR noted that public safety would initially be addressed through first aid services provided at the resort, and proposed that, within two years of the start of resort operations, a medical clinic be opened. Further, NGR committed to developing an evacuation and emergency program as part of the SLRD plans and in conjunction with Pemberton and Lillooet.

NGR recognised that substance abuse could be a potential problem at the resort and noted that employers would be encouraged to develop substance abuse programs for all employees. In the first stages of development, residents would likely seek community services in local communities such as Lillooet and Pemberton. Nevertheless, NGR committed to working with the resort community to address other social problems such as STD's. Although the need for day care facilities was not anticipated in the initial years of development, NGR noted that any such services would be operated in compliance with provincial regulations.

NGR described the overall effects of the resort development on regional health and health care services as being positive. The economic benefits of the project, including employee wages and associated taxes would provide an increased tax base for local communities. This, combined with an increased population, would provide the necessary justification for maintaining or improving the health care services currently available. Due to the influence of Whistler on Pemberton, Lillooet would most likely experience the most significant growth impacts from the Melvin Creek/Cayoosh resort development. Managed growth should lead to increased tax revenues to the community and thereby reduce per family costs.

NGR also noted that the proximity of a winter recreational facility would contribute to the overall community health of the region. Further, by providing employment and training opportunities, the resort would also contribute to the well-being of the region. The peak employment season would be during the winter months when there has traditionally been a higher level of unemployment in rural communities.

Project Report Specifications (6.5)

In its June 10, 1997 letter, MoH indicated that NGR had addressed all of the health issues associated with the proposed resort development. Consequently, no further requirements were specified for the project report.

Issue Treatment in Proponent's Project Report (6.5)

As there were no health-related requirements specified, NGR provided no further information with respect to this issue in the project report.

Agency Review Comments on Project Report (6.5)

In its October 12, 1999 letter, MoH confirmed that its EA-level concerns had been addressed and that further health-related issues could be deferred to the post-EA review process.

Proponent's Responses to Agency Comments on Project Report (6.5)

NGR indicated, in its October 26, 1999 letter, that it recognised the post-EA health issues identified by MoH and would follow-up appropriately during the permitting stage of review.

Additional Issue Consideration (6.5)

A. Health Services and Hospitals

A concern was raised that resort development may lead to increased demands on the health care system in the local area. In response to a project committee inquiry about how funding becomes available to deal with increased demand for health services, MoH has advised that, for the purposes of general health care provision, each Health Region is funded by the province. Health service delivery costs are not charged back in any specific way to individual private developments beyond the normal taxation system. Increased use of health services should result in increased funding, and this should be in proportion to the increased demand, unless the local population utilises services at a rate which is higher than the provincial norm.

B. First Aid Facilities at the Resort

MoH has advised the project committee that there is no current government policy requirement for a proponent to provide first aid facilities at a ski resort. Nevertheless, given the remoteness of the resort from Lillooet, MoH recommends that NGR install a reasonably equipped first aid station at the resort, and staff it with personnel who hold valid first aid certificates. The facility should be functional, and ideally, qualified staff should be available at all times. The resort would be expected to fund the on-site first aid station and its trained staff. Given the absence of a post-EA permitting process for the first aid facility, MoH is prepared to defer most issues to the CASP ski area master plan stage. Initial data of interest will include:

- the approximate location (if known), and approximate physical area of the proposed station;
- the main facilities (e.g. number of beds) to be provided;
- the proposed number of care-givers and their qualifications (e.g. first aid certificate); and
- hours of operation.

NGR has indicated, in response to a First Nations recommendation, that the resort would have first aid services in the initial years and, as quickly as possible, develop its own small clinic for on-site treatment of emergency accidents and sickness. NGR hopes that the resort is able to attract on-site medical staff interested in the lifestyle of the resort, and that they would be available for emergency services, 24 hours per day

C. Ambulance Service

Regular ambulance service to the resort for use by the resort's visitors is a provincially funded service. NGR may chose to base an industrial ambulance at the site at its own

cost for its own employees (e.g. through an arrangement with the Workers Compensation Board [WCB]). NGR is requested to consult with the WCB about the possible need for an industrial ambulance, and with the BC Ambulance Service (BCAS) about suitable ambulance arrangements for visitors. NGR has indicated, in response to a First Nations recommendation, that a resort-based ambulance, especially during the winter season, makes sense.

D. Emergency Response Planning - General

The proponent is responsible for making adequate arrangements to assure the safety of its clientele, employees and other members of the public who visit the resort development. Such arrangements would be expected to include development and funding of a well-trained and competent ski patrol organisation, and could also include on-site first aid and ambulance facilities, as noted elsewhere in this section. At times, the proposed resort may place significant incremental demands on existing public safety systems in the region. Affected services could include search and rescue, first aid, ambulance, hospital, police and fire-fighting services. At the same time, it is not anticipated that the public safety and emergency management issues raised by the project would be on the same scale as those at large resorts such as Whistler.

If the project is granted an EA certificate, and proceeds to the development stage, eventually, as appropriate, the proponent will have to negotiate contractual or mutual aid agreements with the administrators of those community support services which may be required from time to time. This will help to clarify who provides services and who pays for them. Where such negotiated contracts and mutual aid agreements are intended by the proponent to form part of the planned response to emergency situations, the proponent, as part of project planning, will have to hold discussions with the appropriate service providers to establish the terms of such arrangements. Key parties which the proponent should consult with respect to emergency preparedness include MAG's Police Services Division, the RCMP, the Provincial Emergency Program, SLRD, the WCB and the BCAS. Key issues for these discussions include the current availability of appropriate emergency management systems, and the need for additional services to meet the needs of the resort.

During later stages of project planning, the types of emergency preparedness issues which NGR will have to address could include any of the following:

- the need to be able to respond to accidents and to treat injuries incurred at the resort;
- the need to provide a search and rescue capability for recreationists who get into difficulty in using the rugged terrain at the resort;
- the need to manage and monitor avalanche and wildfire hazards in the vicinity of the resort and its access road;
- the resort's reliance on a single access road as the only means of ground-level traffic access and egress to the resort, and the attendant risks; and
- the fact that air (i.e. helicopter) access will not be possible at all times, and, in any case, has only a limited capacity to evacuate people from the area in the event of a hazardous circumstance (wildfire, earthquake, flood, etc.).

E. Search and Rescue

On-site mountain search and rescue is considered to be the responsibility of the proponent. This proposal has not raised any unusual search and rescue issues which need special attention during the EA review of the project. Thus, they will be addressed through the CASP process in the development of a ski area master plan.

If the Melvin Creek/Cayoosh resort project proceeds, particular stress will be placed on minimising the incidence of resort visitors and employees wandering out-of-bounds and into neighbouring drainages, in part to address wildlife management concerns – see for example, section 6.2.3.2.3 (*Grizzly Bears*). However, despite the best efforts of the resort operator, a few tourists, skiers and mountaineers may venture into the mountainous terrain at, and in the vicinity of, the project site at all seasons, placing demands on backcountry rescue services. Additional search and rescue activity may be necessary in areas surrounding the resort, in part due to the generally increased public use of the area, once resort development begins.

F. Substance Abuse

In response to a project committee inquiry about whether or not unusual or noteworthy substance abuse problems arise at resort communities such as the proposed resort villages, MCF has advised that all resort communities share an awareness of drug and alcohol problems. How well they cope with them depends on the commitment to joint community efforts.

There are no particular government policy expectations of the business/development sector in BC with respect to the management or control of substance abuse problems associated with, or attributable to, business or development. In any case, drug abuse problems are beyond the capacity of any one party (whether government or a private developer) to address and resolve through unilateral action. Society rejects any control or prevention strategy which intrudes too obviously into the personal lives of individuals. At their discretion, some employers sponsor employee substance abuse programs which form part of the employer's orientation and staff development training program (e.g. by articulating a strict disciplinary policy to ensure a healthy and safe working environment). For resorts, programming measures targeted to resort visitors might also be an option.

Some ski resorts, including Whistler, have identified drug and alcohol issues as a community concern. If the project proceeds, MCF encourages NGR to maintain an ongoing relationship with key elements of the local community, including MSDES staff, on its behalf, the staff of local alcohol and drug programs, the Medical Health Officer, the Director of HIV/AIDS Division at MoH in Victoria, and local government, intended to anticipate and address problems which may be associated with substance misuse or other negative social effects of the project as they develop.

G. Sexually Transmitted Diseases (STDs)

In response to an inquiry from the project committee, MoH has advised that provincial statistics on STDs are not collected in a manner which permits the convenient linkage of the incidence of STDs to specific communities, so that there is no direct evidence with respect to the incidence of STDs in resort communities. Any available data are organized by Local Health Area, rather than by community.

As in the case of drug abuse problems (see above), STD problems are beyond the capacity of any one party (whether government or a private developer) to address and resolve through unilateral action. If the project is approved and a problem emerges once development is underway, a joint community approach, pursued on an ongoing basis with the proponent's participation, is the recommended approach. Low-key on-site awareness measures such as those which are adopted at other resorts could be considered by NGR. These could include the display of posters and installation of condom machines in appropriate locations, and perhaps also employee counselling services. NGR is advised to contact MoH's Division of STD/AIDS Control at the BC Centre for Disease Control in Vancouver and the Director of HIV/AIDS Division at MoH in Victoria for further advice on community awareness programming.

Public Comments on Issue and Project Committee's Position (6.5)

1. PUBLIC COMMENT:

Need to consider the implications of the resort on local ambulance/health facilities.

PROJECT COMMITTEE POSITION:

Potential implications of resort development to local ambulance/health facilities were adequately addressed for EA-level review - see above discussion.

First Nations Comments on Issue and Project Committee's Position (6.5)

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs provided a report entitled *St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort* (undated).

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk.

Part I of the report addressed the social and cumulative impacts of the resort development on the eleven St'at'imc communities. Emergency health and ambulance services were included in the discussion.

1. FIRST NATIONS ISSUES:

The report noted that the St'at'imc currently make use of the health services in Pemberton and Lillooet. These existing health service centres are under extreme pressure to provide adequate staff and service levels to meet present demand. Establishment of the proposed resort would put added pressure on the existing network of emergency and primary health care services serving both the St'at'imc and other area communities.

The report made the following recommendations:

- arrangements should be made by the province to ensure that regional health centre per capita funding, staffing and services levels are increased to accommodate increased emergency demands; and,
- arrangements should be made by the province to base one ambulance at the resort on a seasonal basis. This placement should be made permanent when demand is sufficient and infrastructure is in place.

PROPONENT RESPONSE:

While the health facilities in the Pemberton and Mount Currie communities may be under extreme pressure, those in the Lillooet area are not under this same pressure, and could be considered to be under-utilised at the present time. NGR attached to its health issue responses some summaries of interviews conducted with relevant staff from Lillooet Hospital, Lillooet Ambulance Services, Pemberton Health Facilities, and the Thompson Health Region. These interviews identified the general under-utilization of Lillooet hospital and ambulance services, and the ability for each to accommodate increased demand resulting from resort development. Pemberton health facilities were identified as being physically able to cope with increased demand, but currently under significant financial pressure due to rapid growth in the area.

While it is difficult to forecast where all resort employees will live, the present employee models indicate that a large number of the single employees would live in the resort, utilizing employee housing within the resort itself. Married employees with families would wish to locate nearer to schools and other community facilities. NGR believes that most employees would opt for living in Lillooet, rather than Pemberton, because it is 25 km closer to the resort than Pemberton (although Mount Currie would be 10 km closer than Pemberton). In addition, Lillooet offers many community services not available to Pemberton (i.e. hospital, skating, swimming, curling, recreation centre, etc.), and the cost of housing is significantly lower. However, due to the proximity of Whistler and Vancouver, Pemberton could be considered more desirable for a significant number of resort family staff.

In terms of hospital options, Lillooet would be the most desired option, since hospital facilities are closer in Lillooet than in Pemberton. The facilities and hospital in Lillooet are significantly more developed and equipped than those available in Pemberton. NGR believes that all hospital and ambulance services required by resort visitors would be provided in Lillooet, except when attending to (1) serious life threatening injuries, which would likely be medivaced to Vancouver, and (2) traffic accidents which occur west of Duffey Lake, where Pemberton services would be used. Thus the Lillooet Hospital and ambulance facilities would service the resort primarily, while Pemberton's facilities would experience low-level impacts from the resort visitors and staff.

With regard to the two recommendations in the St'at'imc report:

1. NGR agrees that this will be required, especially for Pemberton/Mount Currie. However, in discussions with staff in the Lillooet area, they have already begun to anticipate and plan for increased service levels, and are ready, once the resort

is approved, to begin the appropriate measures to manage additional activities resulting from the development of the resort.

2. This is a reasonable request. It is anticipated that the resort would have first aid services in the initial years and, as quickly as possible, develop its own small clinic for on-site treatment of emergency accidents and sickness. It is hoped that the resort is able to attract on-site medical staff interested in the lifestyle of the resort, and that they would be available for emergency services, 24 hours per day. A resort-based ambulance, especially during the winter season, is a sound recommendation. It should also be noted that all major construction jobs will require that an industrial ambulance be on-site during the construction season. This is a WCB requirement, and would most likely be met by a resort-based common ambulance service.

PROJECT COMMITTEE POSITION:

For the purposes of general health care provision, each Health Region is funded by the province. Increased use of health services should result in increased funding, and this should be in proportion to the increased demand, unless the local population utilises services at a rate which is higher than the provincial norm. Provision of ambulance services by the BCAS at the Melvin Creek/Cayoosh resort, will be comparable to that provided at any other similar resort. If experience indicates the need to station an ambulance at the resort on a seasonal basis, that contingency will be considered through a consultative process by BCAS at that time. The project committee also noted a minor point of clarification with regards to NGR's response. All medical transportation other than that of workers, is done by the BC Ambulance Service.

Proponent's Commitments Relevant to Issue (6.5)

The proponent has committed to

- establish a first aid facility at the resort;
- within two years, encourage the opening of a medical clinic; and
- base an industrial ambulance at the resort for transporting workers, per WCB requirements.

Status of Issue at Time of Referral to Ministers (6.5)

The project committee considers the issue resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Health effects* - Adequate provision has been made to address the health-related issues raised by the resort project, including the management of increased health service demands at the resort and in local communities (for hospitals, first aid facilities, ambulances, etc.), and of public health issues at the resort community.

6.6 CULTURAL AND HERITAGE EFFECTS

6.6.1 FIRST NATIONS TRADITIONAL USE ISSUES

Issue(s) (6.6.1)

The primary issues related to the impact of resort development on traditional St'at'imc use of the Melvin Creek drainage and surrounding areas.

Content of Application (6.6.1)

First Nations information provided by NGR in section 15 of NGR's application included an Archaeological Overview Assessment (AOA) of the Melvin Creek watershed archaeological resource potential, an Archaeological Impact Assessment (AIA), and a descriptive overview of NGR's First Nations consultation activities leading up to submission of the application on November 7, 1996.

The results of the July 1, 1992 AOA report, entitled "*An Overview of Archaeological Resource Potential Associated with the Cayoosh Resort Recreational Development Project Area, Melvin Creek Valley, Southwestern BC*", suggested that there was sufficient reason to conduct a subsequent AIA, focusing on several specific areas within the upper Melvin Creek valley. These conclusions were confirmed in the March 15, 1993 AIA report by Antiquus Archaeological Consultants Ltd. (section 15 of the application). Archaeological information presented in that report, entitled "*An Archaeological Impact Assessment for the Proposed Cayoosh Resort Recreational Development Project Area, Melvin Creek Valley, Southwestern B.C.*" addressed issues pertaining to ground surface reconnaissance inspection, judgmental shovel testing and oral interviews.

First Nations consultation activities undertaken by NGR were presented in the application (section 6.C.) as a listing of contacts and meetings held to inform First Nations of the proposed project. Soon after NGR began studying the Melvin Creek valley for its ski potential in the very early 1990s, it made contact with local First Nations to informally discuss their historical uses of the area. Since that time, NGR has attempted to inform First Nations of the ski resort proposal and establish a working relationship and consultation program. NGR met regularly with representatives from the Lillooet Tribal Council (LTC) and St'at'imc Chiefs, and has stated on numerous occasions that it needs the support of First Nations for the resort to be successful.

First Nations Review Comments on Application (6.6.1)

Representatives from the Anderson Lake First Nation and In-SHUCK-ch/N'Quat'qua Tribal Council participated in two project committee meetings. In a February 12, 1997 letter to the EAO, the In-SHUCK-ch/N'Quat'qua Treaty Task Group stated that there was a need for a traditional use study which included examining areas in adjoining watersheds. Specifically, the In-SHUCK-ch/N'Quat'qua requested that attention be given to the following topics: a literature search of First Nations use of the area; oral interviews of area usage; archaeological surveys and testing of heritage locations in the area; and fieldwork to assess First Nations cultural values within the area.

The LTC advised the EAO in a August 15, 1997 letter that it did not have sufficient time to review NGR's application, and would not be submitting review comments on the resort project. However, after the EAO had provided some funding assistance to hire a consultant, the LTC did provide comments to the EAO on the draft project report specifications in a September 22, 1997 letter. Topics receiving attention in this letter included: organisation and structure of the project report, sewage collection, treatment and disposal; wildlife resources; floodplain development control; socio-economic issues; and First Nations issues.

The LTC recommended that additional studies be undertaken on traditional use and socio-economic issues, and that NGR seek the approval of the LTC on the study terms of reference and choice of consultant. Specifically, it was suggested that an Aboriginal Impacts Assessment Study should be undertaken to address the impact of the project on First Nations use of the area for hunting and trapping, fishing, gathering of plants, and social, spiritual and ceremonial uses. Specific resort impact issues were to include the traditional use impacts of potential air and water pollution, solid waste, liquid waste, changes in water supply and quality, noise and traffic impacts, and additional access roads and trails. The LTC further recommended an assessment of the loss of access to traditional foods and medicines through avoidance of the area by wildlife, elimination of plants through clearing or pesticide use, or indirect changes in diet from the perception that traditional foods are contaminated. Studies should predict alterations in the patterns of use of traditional resources, and the medicinal, social, cultural and economic consequences of these alterations, identify potential significant adverse effects, and identify measures which NGR would implement to avoid, minimize, rehabilitate or restore, or protect First Nations resources which would be adversely affected by the project

Proponent's Responses to Agency Comments on Application (6.6.1)

In a September 22, 1997 letter, NGR indicated that it was taking First Nations issues very seriously, but noted the need for the province's participation to achieve progress in discussions with First Nations, because of the complicating factor of Aboriginal rights and titles issues. NGR mentioned having had many meetings with St'at'imc Bands, and understanding that First Nations communities had not reached any decision about the resort proposal. NGR reports having assured First Nations that it would not proceed with development before an agreement with the Bands. This point is also made in an earlier letter, dated April 6, 1997, which stated that it is essential for First Nations to understand the project, approve the land use and participate in the economic benefits, both on and off reserve.

In addition, in its September 22, 1997 letter, NGR noted that its archaeological studies indicate historical hunting and gathering by First Nations in Melvin Creek, and agreed that hunting opportunity would be lost in Melvin Creek if the resort proceeds. At the same time, NGR reasoned that there would be easier access for gathering traditional medicines and food. Trail and road access into the alpine would be minimized, so that significant impact on alpine plants and flowers are not anticipated.

Project Report Specifications (6.6.1)

Six specifications referencing First Nation issues were included in Volume 1 of the reporting requirements prepared by the Melvin Creek/Cayoosh Project Committee. Specifications G.1#1 through #3 outlined the basis for a traditional use study. Specifications G.1#4 and #5 addressed NGR's consultation requirements, while specification G.1#6 outlined the need to re-evaluate the resort-related socio-economic issues affecting local Aboriginal communities.

Further Negotiations on Studies (6.6.1)

Ultimately, NGR was unable to develop a satisfactory working relationship with First Nations which would allow it to comply with the reporting requirements in section G of the specifications. In November 1998, St'at'imc representatives notified the EAO of their preference for the EAO to take the lead responsibility for most of the First Nations study requirements itemised in section G of the October 7, 1997 finalized specifications. Further discussions involving the St'at'imc, the EAO and NGR eventually led to development of a funding agreement for First Nations studies (in October 1999 – see below).

Amendments to Project Report Specifications (6.6.1)

In keeping with these discussions, on July 2, 1999, the EAO issued a formal public notice that the Melvin Creek/Cayoosh project committee had approved amendments to section G of the specifications to eliminate some reporting requirements which had hitherto been considered NGR's responsibility. NGR was still expected to report in its project report on its First Nations consultations (per two of the original specifications - G.1#4 and #5). The deleted reporting requirements were to be addressed through the First Nations study agreement (see below), which was still being negotiated at that time.

Issue Treatment in Proponent's Project Report (6.6.1)

Included in Volume 2, section F of the project report, are the recommendations for mitigating impacts on any heritage resources identified during the AIA. NGR committed to avoiding site EdRn 1 during slope and trail construction, to limit information communicated to site personnel and the public on the whereabouts of any located archaeological and historical sites, and to restrict the use of signage.

Included in Volume 2, section G of the project report are NGR's responses to specifications G#4 and G#5 regarding NGR's consultation activities. NGR provided a discussion of its commitments towards First Nations involvement in the Melvin Creek/Cayoosh development project, as well as a listing of NGR's consultation efforts between May 1991 and January 1999.

In its project report, NGR provided a summary of consultations undertaken with each of the First Nations since the release of the specifications. This summary indicated that NGR met with the following First Nations for the purpose of discussions as outlined below:

- with LTC Chiefs;
- with Chief Mike Leach (LTC Chair) – more than 10 meetings;

- with individual First Nations - Mount Currie, Anderson Lake, N'Quat'qua, Cayoose and In-SHUCK-ch representatives (on several occasions); and
- with the Lillooet Band at a First Nations Employment Seminar.

After October 1997, when the project report specifications were finalized, NGR requested meetings with each Band, at which NGR could present the resort plan and speak to Band members in an open house format. NGR had intended to review and discuss the project description, proposed resort activities, economic opportunities, and potential positive and negative impacts on Aboriginal communities. This offer was made several times to LTC Chief Mike Leach, and also, on May 2, 1997, during a meeting of the LTC Band chiefs. As of June 1 1999, NGR had been unable to establish any meetings with Band members directly, except at a Mount Currie Assembly meeting on March 18, 1998. Requests were made to the N'Quat'qua and Cayoose Bands through the Lillooet Economic Development Committee. The N'Quat'qua meeting took place on July 2, 1998, but the Cayoose Band meeting was scheduled, then cancelled.

In its project report, NGR reported having respected the wish of the LTC and Band leaders not to meet with Band members until St'at'imc Chiefs had met to address the political issues connected with the resort proposal, and had established 'Nation to Nation' protocol with the Province of British Columbia.

NGR did mention a site inspection, organized by the EA Office on September 23, 1997, which nine First Nations members attended. In addition, three Aboriginal representatives attended the project committee's site visit on July 23, 1997. NGR reported having encouraged tribal representatives to attend and observe project committee meetings, with only partial success. NGR noted that the project committee had not had consistent active First Nations participation, and no Bands had agreed to be official committee members.

NGR reported its view that the St'at'imc leadership is well aware of the resort proposal. Individual Band members may not be well informed, and it is known that many do not support the project. In some cases, opponents have little or no specific knowledge of the project, and are opposed on Aboriginal land claim grounds, viewing the project as another encroachment by the non-Aboriginal community on their Aboriginal lands and rights, and an exploitation of Aboriginal resources without compensation.

NGR noted that some Aboriginal members have indicated that they appreciate the potential economic benefits of year-round tourism for St'at'imc people. These members have been trying to better understand the proposal in order to identify opportunities both at the resort and outside the resort area. There appears to be some recognition that environmentally sensitive economic development within St'at'imc traditional territory is good for both Aboriginal and non-Aboriginal communities. There is also some appreciation that tourism can provide an alternative to a declining forest economy base, and that the impact of the tourism industry on the resource base is significantly less than the impact of extraction industries. There is some understanding that the strength of resort development is that the land use is sustainable. NGR stated its belief that, with proper planning, identified negative impacts should be manageable or mitigatable to a level acceptable to the St'at'imc Nation.

NGR concluded its discussion of First Nations consultations with a statement of commitment, as follows: "... *The company has stated at all public meetings that it will not proceed without Tribal Council support. This position was stated to Tribal Council representatives in 1992 during the initial Tribal Council presentation. This position has also been repeated to provincial authorities. NGR's position was made public long before the Delgamuukw decision and other recent aboriginal land titles decisions. NGR's owner has always respected the rights and historical presence of the St'at'imc people and has sought their support since 1992...*"

In accordance with section 14 (1) of the EA Act, in its project report, NGR proposed a First Nations consultation program for the review of the project report. In the view of the project committee, NGR has undertaken consultation activities to the best of its ability, and in accordance with the EA Act. Following receipt and review of the St'at'imc studies on March 28, 2000 – see below - NGR indicated that it was prepared to meet with all interested Bands to review the project and discuss concerns and commitments.

First Nations Study Agreement (6.6.1)

Terms of Reference for the Completion of a St'at'imc Study Regarding the Proposed Melvin Creek-Cayoosh Mountain Resort Project were signed on October 5, 1999. The agreement included funding for completion of cultural heritage, transportation and socio-economic studies, focusing on potential impacts of resort development and possible mitigation measures. The funding was provided primarily by government, although NGR also contributed both financially and in-kind to the completion of these studies.

Using the funding, Creekside Resources Inc. (Creekside - a company owned by the Mount Currie First Nation) has conducted transportation and infrastructure, socio-economic and traditional use studies on behalf of the St'at'imc Chiefs, covering both the information requirements originally identified in specifications G.1#1 to #3 and #6, and other issues of interest to St'at'imc. The objectives of these studies were to gather information, identify issues, and provide assessments of project-related impacts on traditional and contemporary land and resources uses, as well as assessments of socio-economic, transportation corridor and other infrastructure issues of interest and/or concern to First Nations, and for government and NGR to fulfill their legal obligations.

First Nations (Creekside) Studies - Review Comments on Project Report (6.6.1)

On March 28, 2000, the EAO received the following four studies, performed on behalf of the St'at'imc Chiefs by Creekside and consultants commissioned by Creekside:

1. ***Cultural Heritage Study Final Report***, dated March 24, 2000, and prepared by Sue Montgomery, Project Manager, St'at'imc Impact Assessment study – it includes the following components:
 - ***Final Report – current status (as of April 7, 2000) – draft, considered incomplete by St'at'imc Chiefs, therefore not approved by them – being used at government's risk.***
 - ***Appendix I – St'at'imc Cultural Bibliography – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) – as for Final Report.***

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- **Appendix II – Interview Summary Table** – current status (as of April 7, 2000) – as for Final Report.
 - **Review of Archaeology Studies Regarding Proposed Cayoosh Creek Resort - Final Report** – March 24, 2000, prepared by Sue Montgomery, Archaeologist, Project Manager, St'at'imc Impact Assessment Study – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) – draft, may need further work, once the Cultural Heritage Study Final Report is completed.
 - **Final Report – Review of Wildlife and Habitat Assessment for St'at'imc Impact Assessment Study of the Proposed Cayoosh Resort Development**, dated March 16, 2000, and prepared by Raymond Demarchi and Carol Hartwig, Ecodomain Consulting – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) – considered final, but St'at'imc Chiefs dispute the consultant's statement that MELP is legally responsible for wildlife in the province, since the province is deemed to have asserted jurisdiction over wildlife in St'at'imc territory without St'at'imc consent.
 - **Revised Draft Report – St'at'imc Cultural Heritage Study – Proposed Melvin Creek/Cayoosh Creek Resort: Review and Summary of St'at'imc Ethnobiological Documentation with Reference to Melvin Creek and Environs, British Columbia**, dated March 2000, and prepared by Brian D. Compton – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) – may be finalized shortly, but St'at'imc wish to discuss an inaccuracy in the report with the author.
2. **St'at'imc Impact Assessment Study – Proposed Cayoosh Resort – Comments on Transportation and Infrastructure Issues**, dated March 24, 2000, and prepared by Kelvin Carey and Mark Mertz, UMA Engineering – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) - final.
 3. **St'at'imc Socio-Economic Study – Final Report**, dated January 18, 2000, and prepared by Columbia Pacific Consulting – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) - final.
 4. **St'at'imc Social and Cumulative Impact Analysis Arising from the Proposed Cayoosh Resort** (undated) – current status (as of latest St'at'imc correspondence on the subject, April 7, 2000) - draft, may need further work, once the Cultural Heritage Study Final Report is completed.

Note – The St'at'imc studies were filed with the EAO in draft form on March 28, 2000, with advice from St'at'imc legal counsel that the studies should be considered as drafts, since they had not been approved for release by the St'at'imc Chiefs, and that therefore, any reliance on them is at government's own risk. The current status of each report, as noted above, is as outlined in an April 7, 2000 letter from Chief Mike Leach, on behalf of the St'at'imc, which indicated that, while some reports were still draft, others were now final and approved. Where reports are not considered final and approved for release by St'at'imc Chiefs, references to them in this project committee recommendations report acknowledges this.

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Upon receipt, the reports were immediately circulated to federal, provincial and local government agencies, and also to NGR. In keeping with the EAO's agreement with the St'at'imc Chiefs, the studies were circulated to project committee members on a confidential, need-to-know basis for their review.

The issues identified in these reports are noted, and are responded to by the project committee, in the relevant sections of this project committee recommendations report. Also noted are any key points from NGR's comments on the St'at'imc reports.

Responding to the First Nations (Creekside) Studies (6.6.1)

In this report, the project committee has included responses to most of the issues raised in the First Nations studies. Where NGR has also provided responses to issues, these have also been reported. Responses to St'at'imc issues are incorporated into the overall write-up for each issue which has been recognised and addressed by the project committee, as follows:

- local governance – see section 5.9;
- access road – location and design – see section 6.1.2.1;
- liquid waste management – see section 6.2.1.2;
- special/hazardous wastes – see section 6.2.1.3;
- water quality – see section 6.2.1.4;
- accidents and malfunctions – see section 6.2.1.6;
- water supply – see section 6.2.2.1;
- fisheries – see section 6.2.3.1;
- wildlife – general – see section 6.2.3.2.1;
- mountain goats – see section 6.2.3.2.2;
- grizzly bears – see section 6.2.3.2.3;
- birds – see section 6.2.3.3;
- threatened and endangered vegetation communities – see section 6.2.3.4;
- alpine vegetation – see section 6.2.3.5;
- cumulative environmental effects – see section 6.2.4;
- recreation and tourism effects – see section 6.3.3;
- commercial and non-commercial fish and wildlife recreation – see section 6.3.4;
- employment effects – see section 6.4.1;
- accommodation effects – see section 6.4.3;
- service delivery effects – see section 6.4.4;
- community stability effects – see section 6.4.5;
- regional traffic effects – see section 6.4.6;
- health effects – see section 6.5;
- First Nations traditional use – see this section (6.6.1); and
- archaeological resources – see section 6.6.2.

First Nations (Creekside) Traditional Use Findings(6.6.1)

Traditional use of the project site and surrounding area is discussed in the March 24, 2000 report entitled *Cultural Heritage Study Final Report*, by Sue Montgomery.

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Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it is considered incomplete by St'at'imc Chiefs, requires more research, and therefore is not approved by them.

A summary of some of the key points is presented below, but specific information on the locations of traditional use activities is not reported here, in order to preserve the confidentiality of such information.

A. Key Findings

- *"...All St'at'imc people speak the same language, traditionally lived in extended families, shared the same material culture, gained sustenance from salmon fishing, hunting, trapping and plant resource gathering, and are linked by family relationships throughout the community..."*
- The St'at'imc people continue their traditional way of life as well as participating in the wage-based economy.
- A parallel economy exists, based on traditions of fishing, hunting and plant collecting, and access to traditional resources is still an important part of St'at'imc cultural identity and economic well-being.
- Economic development projects within the St'at'imc traditional territory would affect St'at'imc cultural and heritage values.
- Because of lack of development, the Cayoosh Creek valley and its tributary watersheds, including Melvin Creek, are important traditional St'at'imc hunting, fishing and resource gathering areas.
- Building and operating a resort in Melvin Creek would affect traditional use of the area.

B. Study Approach

- Since regional effects are anticipated, ethnographic interviews were conducted with respect to not only Melvin Creek, but also Cayoosh Creek from Downton Creek to Duffey Lake, and the following valleys: the Lost, Haylmore, Barkley, Common Johnny, Hurley Silver Mine, Blowdown, Gott, Boulder and Downton valleys.
- St'at'imc communities were interviewed with respect to traditional activities such as hunting, trapping, food, medicinal and technology plant collecting, spiritual values, archaeological heritage, Aboriginal trails, and laws, practices and customs regulating land use.
- In the author's view, the type of information collected, focusing on cultural values and traditional uses, did not correlate closely with the type of data needed for identifying, or assessing impacts on, Aboriginal rights or title. The focus was on contemporary use and use in the recent past, and not on St'at'imc use and occupation as of 1846.
- In 13 interview sessions, 22 people were interviewed at five communities.
- Ethnographic interviews were not conducted, or else, not completed, for some communities, for various reasons which are explained by the author.

C. St'at'imc Cultural Context

- There has been broad St'at'imc and non-Aboriginal recognition since the mid-19th century that the St'at'imc have a defined territory from which they derive their culture, sustenance and economy.
- The St'at'imc are divided into southern and northern groups, corresponding to the non-Aboriginal designations 'Upper Lillooet' and 'Lower Lillooet', based on language variation, geographic separation by mountains and waterways, and ecological and climatic differences.

D. Reported Use of Melvin Creek and Surrounding Valleys*

* *As noted above, specific locations are not identified in the text.*

- Seven interviewees described 13 sites in the Melvin Creek valley where they are aware of St'at'imc activities.
- Some 141 traditional use areas were identified in other watersheds.
- Based on ethnographic interviews completed to date, present-day use of Melvin Creek consists almost entirely of deer hunting, with other traditional activities such as plant gathering not identified through the interviews as being pursued at the present time. Other types of activities and facilities now or in the past, include:
 - trails;
 - hunting of deer, goat, marmot and blue grouse;
 - hunter's cabin;
 - trapping;
 - medicinal plant collecting;
 - collecting wild potato, hakwa7 (cow parsnip), root vegetable, devil's club, kinnikinick, alpine fir, mullen and white pine bark sap;
 - picking huckleberry and wild Oregon grape;
 - men's vision quest area;
 - Indian doctor training area; and
 - presence of culturally-modified trees (CMTs).
- A similar range of activities and facilities were reported in surrounding valleys also, including the Cayoosh, Downton, Lost, Haylmore, Barkley, Common Johnny, Blowdown, Boulder, Gott, Hurley Silver Mine valleys, and Duffey Lake:
 - trails;
 - deer, bear, marmot, blue grouse and goat hunting;
 - grizzly bear habitat;
 - deer migration route;
 - goat habitat;
 - hunters' and trappers' cabins;
 - trapping;
 - trout fishing;
 - stinging nettle, swamp tea, fir needle (for smudge), hatkwa7 (cow parsnip), root vegetable, wild potato, devil's club (medicine), rose hips (tea), juniper and medicinal plant collecting;
 - blackcap, xusem (soapberry), mushroom, wild strawberry, salmonberry, raspberry, huckleberry and saskatoon berry picking;

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- men's vision quests;
 - archaeology sites (CMTs, house pit, rock art);
 - Indian doctor training area;
 - campsites;
 - cedar wood collecting for fence posts, fir and birch fire wood collecting; and
 - spiritual cleansing.
- Regionally, St'at'imc make considerable use of the area, with deer hunting and plant collecting in all watersheds.
 - It is reported that MoF revoked the trapline of an Elder's father in Melvin Creek.
 - Melvin Creek was named for the son of the person who lost his trapline.

E. Potential Resort Impacts on Traditional Use – Melvin Creek

- Upper Melvin Creek would be unavailable for hunting and other traditional uses.
- Based on the interviews, the primary activity in the area is currently deer hunting. This occurs in late fall and winter, which coincides with the high season of the resort.
- Winter recreation activities outside the downhill runs, but elsewhere in the valley, are expected to include cross-country skiing, snow-shoeing and snowmobiling, which are likely also incompatible with hunting.
- The lack of interview-based evidence of other present-day activities besides deer hunting may reflect difficulty in gaining access to the valley due to lack of roads, except by hunters on horseback and ATVs.
- Further interviews may identify spring and summertime resource collecting activities, which, if present now, would also be constrained by resort development, primarily through displacement of vegetation by facilities, but also because of mountain biking and hiking associated with the presence of non-Aboriginal people in the valley.

F. Potential Resort Impacts on Traditional Use – Surrounding Areas

- Snowmobiling, backcountry cross-country skiing and snow-shoeing could bring many recreational users into adjacent watersheds, affecting traditional deer hunting in these valleys – recreation and traditional hunting may conflict.
- It is possible that tour operators would be granted backcountry recreation permits to further these activities.
- The area may become better known, attracting more sports hunters, increasing pressure on game in adjacent valleys.
- Spring and summer traditional activities could be affected by greater numbers of hikers, ATV users, mountain bikers and other recreational users in adjacent valleys.
- In the long term, lands in adjacent watersheds may be of interest to businesses offering shops and services to travellers, and also to persons who want to purchase recreational properties, although it is recognised that there are no plans for this at this time.

G. Potential Mitigation Options

- The report's author indicates that mitigation options are connected to issues of Aboriginal rights and title, and that these are issues which need the attention of lawyers. Bearing this in mind, she suggests some mitigation strategies for discussion purposes. (**Note** - St'at'imc Chiefs have not taken a position on these strategies.)
- Little mitigation is possible in Melvin Creek itself, other than the basic option of not developing the resort. With resort development, the valley would be unavailable for St'at'imc traditional uses. The valley could not be used for hunting, and other resource gathering activities would be limited.
- In adjacent drainages, consideration could be given to the transfer of all current provincial tenures, including backcountry recreation permits, wildlife management areas, protected areas, forestry tenures, provincial parks and other Crown land transfers to the St'at'imc, on the basis of fee simple ownership.
- St'at'imc could then develop an integrated management plan, and set aside some areas for exclusive St'at'imc use for traditional resource procurement, while other areas could be used for ecologically responsible revenue-generating projects such as timber harvesting, non-timber harvesting, development projects and recreation and adventure tourism operations.
- Such an approach would not work without tight regulation of use of, and access to, adjacent drainages. Detailed, strictly enforced controls on use and access in adjacent drainages would be essential.
- One specific approach would be negotiation of a replacement of all existing tenures by a single new tenure, a St'at'imc Management Area, initially co-managed with the province, but eventually transferred to St'at'imc control.
- St'at'imc people would need to be re-familiarised with their land and culture. One existing mechanism to achieve this is ecosystem-based landscape management. Significant resources would be needed from the province to investigate the feasibility of approaches to the types of economic development opportunities suggested in the socio-economic study.

H. Conclusions and Recommendations

- Interviews with St'at'imc people reveal past and present St'at'imc use of Melvin Creek and surrounding watersheds, and a large number of traditional use areas in and around Melvin Creek.
- Additional interviews with Chalath, Sekw'el'was, Skatin, Xa'xtsa and Samahquam people are needed to ensure cross-St'at'imc representation of input and views.
- Additional interviews specific to Melvin Creek are needed, to further explore other potential past activities and spiritual significance.

Proponent's Response to First Nations (Creekside) Comments on Project Report (6.6.1)

NGR has provided the following comments on the *Cultural Heritage Study Final Report*. NGR's comments were received by the EAO on April 22, 2000.

A. Reported Traditional Use of Melvin Creek and Surrounding Areas

The document reported that eleven men (interviewees or people identified by interviewees) frequently use the Melvin Creek valley for hunting today, and eight other men, now deceased, were previously known to hunt in Melvin Creek. This compares with at least 97 men and women (interviewees or people identified by interviewees) presently utilising the watershed surrounding Melvin Creek. The difficult access to Melvin Creek suggests that this area was not used as frequently as other more accessible areas in the region.

The guide/outfitter, Mr. Leo Ouellet, has advised NGR that he has seen small groups of Aboriginal hunters on a few occasions. Aboriginal hunting parties in the Melvin Creek area are, in his opinion, rare. Mr. Ouellet also noted that all groups had used the horse trail which he built, and that an Aboriginal individual, Mr. Leo Loveway, worked for him and gained knowledge of the trail created by Mr. Ouellet and his crew. Following Mr. Loveway's employment with Mr. Ouellet, Mr. Loveway has led other members of the Fountain community, and perhaps others, up into Melvin Creek.

B. Reported Traditional Uses

Based on NGR's review of present-day trails, there are only two trails into Melvin Creek. The main trail up-valley from Cayoosh Creek was constructed entirely by Mr. Leo Ouellet and his crew in the mid-70's. The second trail, which comes from the Haymore and Barkley valleys, was constructed by a mining company which was carrying out exploration work. There is anecdotal evidence that, prior to the construction of the mining road, a trail to Melvin Creek did exist from the D'Arcy area, via the upper Barkley valley and adjacent drainages. There is also written evidence of First Nations people gathering in the Haymore valley. The present-day trail from the Barkley valley to the Lower Twin Lakes follows a road constructed by bulldozer.

The report refers to the hunter's cabin. This cabin was constructed by the guide/outfitter in the early 1980's, so does not appear to be part of the historical resources, as suggested.

A men's vision quest area, Indian doctor training area and CMTs are noted as past historical activities. No additional description is given of these activities. Over the past ten years, NGR has spoken with many First Nations members and asked about activities in the Melvin Creek valley. While these described activities were reported as occurring in high alpine mountain areas, no First Nations members described them as taking place in Melvin Creek. The guide outfitter, Mr. Ouellet, indicated that he had never seen First Nations gathering in the valley in the more than 25 years that he has been using the valley. On several occasions, he has seen Aboriginal hunters in the area. In addition, the Aboriginal hunters whom he employed have never spoken to him about these activities having taken place in Melvin Creek.

C. Potential Resort Impacts on Traditional Uses

The cultural heritage report notes that deer hunting occurs in late fall and winter. While deer hunting during the winter season is possible at the lower elevations of Melvin Creek, this location is clearly outside the areas where the resort would be located. In most years, by mid-November, snow depths are well above the 40-cm depth, a snowpack level which was determined by Trottier (1983) to have an effect on deer movement (see page 34 of the Iris Environmental Systems report, *Overview of Ski Area Experience with Mountain Goat, Grizzly Bear and other High Profile Species in the Rocky Mountain National Parks and Environs*: Day and Odd, January 11, 2000). By December 22, snow depths in the area proposed for skiing will be at least 80 cm in most winters. The cultural heritage report further notes that winter recreation within the valley may include cross-country skiing, snowshoeing and snowmobiling, and that these activities are likely incompatible with hunting. As reported earlier by NGR, recreational snowmobiling will not be permitted within the Melvin Creek area.

In addition, the St'at'imc cultural heritage report notes that if the resort does proceed, the Melvin Creek drainage would become unavailable for St'at'imc traditional uses. Melvin Creek valley could not be used for hunting due to the creation of the village sites and proximity of recreational users. Other resource gathering activities would be limited and it is likely that the only way to maintain Melvin Creek as a hunting area for the St'at'imc is not to build the resort.

In NGR's view, while there is a potential conflict between hunting and resort use, the actual hunting season in the upper valley, which is where the resort is located, would occur in the month of October, when the early snows are arriving in the upper valley, but prior to snow depths reaching levels when skiing could take place. NGR is prepared to work with the St'at'imc hunters to see if an opportunity for hunting could still prevail for the October period, since this would be one of the lowest utilisation periods for resort activities. It may be possible to develop a deer management plan, which would include St'at'imc hunting in the two-to-three-week period when the animals are still in the upper valley. MELP has also suggested that bow hunting could be permitted within the resort area. While NGR has not been part of any discussion with MELP on this proposed activity, this possibility may be achievable if it is of interest to the St'at'imc hunters. In terms of other resource gathering activities, NGR notes that the vast majority of the alpine and sub-alpine areas will not be disturbed by recreational activities or trails, and gathering activities could easily take place. With road access to the upper valley, gathering activities would be far more accessible to the St'at'imc gatherers than in the past. As reported earlier, in modern times, few recorded gathering activities have been reported by those using the alpine and sub-alpine regions of Melvin Creek.

The St'at'imc cultural heritage report noted that the prime First Nations activity in Melvin Creek is deer hunting. The report does not indicate how many deer are harvested annually, or estimate how many deer may have been harvested over the last 15 to 20 years. This information is important in terms of developing a possible controlled hunting program for the St'at'imc hunters.

First Nations (Fountain Band) Study (6.6.1)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, under cover of a May 17, 2000 letter which indicated that the Creekside cultural heritage report was missing some key information. The new report, dated May 9, 2000, and entitled *St'a't'imc Use of the Duffey Lake Area including the Melvin Creek Watershed*, was prepared by Dorothy Kennedy and Randy Bouchard of the BC Indian Language Project, and was labelled a 'draft final report'.

On June 12, 2000, project committee members were asked to review the Fountain Band report, and to provide review comments, if any.

Fountain's May 17, 2000 cover letter describes the report as an ethnographic, linguistic and ethnohistorical document. The report provides significant additional detail on the way of life (society, culture, economy, organisation and resource management practices) of St'a't'imc people in the Duffey Lake area, and on the history of the St'a't'imc people since the mid-19th Century. A summary of some of the key points is presented below.

- The report was commissioned by the Xaxli'p (Fountain) First Nation to:
 - review ethnographic interviews between 1968 and 1999 with respect to previous mentions of the Duffey Lake area;
 - identify actual traditional use sites in the area, especially in Melvin Creek; and
 - conduct an ethnographic/ethnohistorical/linguistic literature review.
- The study area is not precisely defined in map terms, but is focused on the Duffey Lake area, and includes Cayoosh Creek, which drains the lake, and Melvin Creek.
- The study is based primarily on existing information already on file with the BC Indian Language Project.
- Like the Creekside study, the Fountain study describes the cultural distinction between the upper and lower St'a't'imc peoples.
- Melvin Creek is located in the traditional territory claimed by the N'Quat'qua (Anderson Lake) group of St'a't'imc people, who came over the mountains to harvest resources north and east of Duffey Lake, including Melvin Creek.
- People from the Lillooet Lake area also travelled as far east as Blowdown Creek.
- St'a't'imc people living at the outlet of Seton Lake may have come from the Duffey Lake area.
- St'a't'imc people did not keep domesticated food animals or farm crops, but engaged in fishing, hunting and gathering throughout the area – specific mention is made of berry picking, forest burns to promote berries and animal forage, weeding, digging and replanting of wild plants, trout and salmon fishing, deer hunting (including construction of deer fences), goat hunting, use of spruce, cottonwood or cedar for canoe building, and construction of temporary and permanent structures.
- Mammal use was as follows:
 - Mountain goats were hunted north and east of Duffey Lake, usually prior to mating season, sometimes with the assistance of rock blinds. They were hunted for both their meat and hides, with the wool used for blankets, horns for spear-heads, fat for food and other uses.
 - Black bears were hunted for meat (although this was not a popular meat) and hide (for blankets, rugs and clothing).

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- Grizzly bear were still plentiful in the study area in the early 20th Century, and were hunted for meat and hides.
- Deer were hunted in summer time at their salt licks and regular drinking and swimming places. The meat was eaten fresh or smoked, and the hides were used for clothing and moccasins.
- Flora utilised by Stl'atl'imx and available in the Melvin Creek drainage included: high bush cranberry, dwarf blueberry (found in the mountains, harvested in September), mountain blueberry (picked in July), oval-leaved blueberry, swamp gooseberry, wood strawberry, wild blue-leaved strawberry, cow parsnip (gathered in spring until June), Indian potatoes (Western Spring beauty, dug in the spring or fall), and yellow avalanche lily (dug in July and August).
- Among the identified traditional use sites were the following, which were specific to the Melvin Creek drainage:
 - The Duffey Lake area, including the Melvin Creek watershed, was traditionally utilised by the Stl'atl'imx people for hunting and other forms of food gathering, while trapping was not practised until ca. 1905-1906.
 - An 'Indian Camping Ground' was noted on a sketch map prepared by Sapper James Duffey (1860) where Melvin Creek enters Cayoosh Creek. No descriptive information was provided regarding this camp, suggesting that it was not occupied at that time. [Note - Although there were traces of the campsite in 1860, it is not clear that the exact location is known at this time].
 - From 1932-1977, a trapline was registered by Tommy Napoleon (a Native man from Lillooet) for an area that included the Melvin Creek watershed. He built a cabin in either the Lost or Melvin valleys – this is not clear. There was some overlap between this trapline and a trapping area reserved for 'Mount Currie Band' (Pemberton) trapping. According to the report, the trapline registration application suggests that the area applied for included the entire Melvin Creek drainage, although a 1933 registration map included only the Melvin Lake part of the drainage. As of 1960, government records show the trapline to be in good standing. The report does not document its current status.
 - A prehistoric archaeological site – site EdRn 1 - dated at ca. 3500-2000 BP, was discovered in 1992 in the alpine area of the Melvin Creek valley (Note - during the Antiquus studies for NGR). The site, located north/northeast of Melvin Lake, was probably utilised as a short-term base camp for hunting or as an observation post for monitoring mountain goat movements.
- Conclusions:
 - First Nations people have been present in the Duffey Lake/Melvin Creek area for a very long time.
 - Various features of the landscape, including a 'footprint rock' and Duffey Lake itself, possess mythological significance for the St'atl'imc people.
 - Of key importance has been the area's use for hunting, trapping and obtaining food plants by the Mount Currie and N'Quat'qua (Anderson Lake) people. The Melvin Creek area is most associated with the Anderson Lake Band.
 - In the past, base camps for processing meat and for drying berries and roots were set up in the Duffey Lake/Melvin Creek area, while in more recent times, St'atl'imc people have constructed cabins for hunting and trapping in places.

Proponent's Response to First Nations (Fountain Band) Comments on Project Report (6.6.1)

NGR provided the following comments on the *Sta'atl'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*. NGR's comments were received by the EAO on June 26, 2000.

In NGR's view, the report is consistent with its consultant's understanding of traditional use in the area.

In Section 4 of the report, NGR notes identification of St'at'imc use of mountain goat, black bear, grizzly bear and black-tailed deer, as well as plants, in the Melvin Creek valley. NGR suggests that this is consistent with its previous reporting that there was historical hunting in these areas. NGR also notes that this is consistent with its archaeological study, and suggests that likely, the Anderson Lake/N'Quat'qua people were the users of what are today called the Haymore and Barkley valleys, since the easiest access would be from the D'Arcy area.

NGR is not sure of the location of "Nla-latn" or "Nxemeltam", but, based on the description of "Nla-latn" on page 27 of the Fountain report, it would appear that this area is still part of the Cayoosh drainage, north and east of Duffey Lake, and probably included the high ridge country along Cayoosh Creek. This may be the same area where its wildlife studies had identified high goat use on the slopes overlooking the Cayoosh drainage (which are located away from the proposed resort location). These ridges would have been easily accessible by using the Haymore and Barkley valleys, but not by using the Melvin Creek valley. Based on the suggestion that they are located east and northeast of Duffey Lake, they may well be what are known today as the Haymore and Barkley valleys.

NGR has received reports of considerable historical use from members of the Mount Currie Band in the area up to and slightly east of Duffey Lake.

With regards to the traditional use sites in the Duffey Lake/Melvin Creek area, NGR concurs that the report accurately reflects the historical use, particularly in the Cayoosh Creek valley and Duffey Lake area. NGR notes that the location Melvin Creek near Cayoosh Creek is approximately 6 km from the ski resort location, and some 1,000 vertical feet below the elevation where the resort is proposed. While NGR has investigated the location described as being a previous Indian camping ground (noted on the sketch map prepared by James Duffey in 1860), NGR has not seen actual signs of the remains of this camping ground. In recent times, this area has been used by non-native trappers, and NGR has carefully examined most of the area several times during the past few years. This area would have been a logical and natural camping area.

NGR, in referencing the statement of Charlie Mack on page 25 of the report that it is difficult to go from Lillooet to Duffey Lake, notes that there is evidence of this trip being made by members of the Mount Currie Band. NGR also states that it is much more difficult to travel from Duffey Lake up into the headwaters of Melvin Creek.

NGR has previously reported, in writing, its awareness of both Mr. Tommy Napoleon's trapline and the Mount Currie interest in trapping in the Melvin Creek valley.

The proposed resort would be located in the uppermost elevations and in some of the most inaccessible parts of the Cayoosh Creek drainage. The Fountain Band report supports the premise that there was considerably more use of the Cayoosh Creek valley, Duffey Lake and the Haylmore and Barkley valleys than the upper Melvin Creek area, due to the difficult access into the valley. However, it is clear from NGR's archaeological reports that at least one hunting camp, goat hunting, and most likely black-tailed deer and bear hunting, would have taken place on occasion in the Melvin Creek valley. Gathering activities have not occurred in recent times, and the hunting which is taking place in Melvin Creek could be best described as 'occasional', involving few individuals. Hunting opportunities exist in most of the surrounding valleys, where access is much easier.

NGR considers the Fountain Band report to be consistent with the Creekside report, and with the work done by Creekside's biologists and archaeologists, and with the activities reported in previous literature that NGR has reviewed.

Project Committee's Position (6.6.1)

The St'at'imc and Fountain cultural heritage studies indicate that some limited hunting and gathering activities in Melvin Creek may be impacted by the project. The project committee has given careful consideration to St'at'imc traditional use concerns, and the record of the committee's consideration of these issues is documented in the relevant issue sections of this report. Overall, the project committee has concluded that any potential adverse impacts to wildlife and plants can be either prevented entirely or else substantially mitigated by measures proposed by NGR. This, together with the size of the traditional territory claimed by the St'at'imc Bands, will be used by the province to make an assessment about potential impacts on any Aboriginal rights claimed by the St'at'imc.

Added to this, NGR, in keeping with its commitment to work with First Nations, has offered substantive opportunities for First Nations participation in the project's economic benefits – see NGR commitments reported in this and other relevant sections – which have the potential to mitigate still further any residual adverse effects. The province and the federal government have offered to discuss study results and potential project impacts on First Nations interests on several occasions during the review of the project report. Recent offers to meet and discuss project-related issues have not been taken up by St'at'imc Chiefs.

The project committee has not undertaken any evaluation as to whether the Aboriginal rights and title which have been asserted may be established, or whether the project, if it proceeds, may interfere with those rights if they are established. The project committee also notes that the information collected during the EA review of the project, and the committee's assessment of that information, and of the measures proposed by NGR to prevent or mitigate potential adverse impacts, will be used by the province to make an assessment about potential impacts on any Aboriginal rights claimed by the St'at'imc.

Public Comments on Issue and Project Committee's Position (6.6.1)

1. PUBLIC COMMENT:

Consideration of the project is premature when land claims have not been settled.

PROJECT COMMITTEE POSITION:

Issues connected with the negotiation and settlement of Aboriginal land claims are addressed in processes especially set up to address treaty negotiations, and are beyond the scope of the EA process. Under the EA process, both the proponent and government agencies consult with First Nations, and ensure that, where warranted, traditional site use studies are conducted to determine whether or not development of the project would lead to adverse effects on the exercise of Aboriginal rights in the project area. Should potential adverse effects be identified, the proponent is expected to identify any measures available to prevent, mitigate or compensate for adverse effects. The St'at'imc Bands, which are potentially affected by the project, have prepared and submitted reports which address a wide range of First Nations concerns. The province considers such reports in order to fulfil its legal obligations to not unjustifiably infringe Aboriginal rights, and to advise ministers of the risks of doing so when making recommendations to them. In the case of this project, NGR has expressed a desire to ensure that First Nations interests are addressed. NGR's commitments to do this are found throughout this report, and include a variety of commitments to address First Nations economic interests, as well as mitigating impacts on traditional use activities.

2. PUBLIC COMMENT:

NGR should not be expected to resolve treaty-related concerns.

PROJECT COMMITTEE POSITION:

NGR is not expected to resolve treaty-related concerns through the EA process. See response to item #1, above.

3. PUBLIC COMMENT:

The project area has been used in the past for traditional hunting, hiking and ceremonial purposes.

PROJECT COMMITTEE POSITION:

The St'at'imc cultural heritage study has demonstrated that this is the case. See response to item #1, above.

4. PUBLIC COMMENT:

NGR should commit to hiring/involving members of local First Nations communities

PROJECT COMMITTEE POSITION:

NGR has made a variety of relevant commitments in this regard – see, for example, section 6.4.1 (*Employment Effects*).

Proponent's Commitments Relevant to Issue (6.6.1)

NGR has stated at all public meetings that it will not proceed without the support of the St'at'imc. This position was stated to representatives of the LTC in 1992 during an initial presentation, and has also been repeated to the public and to provincial authorities. NGR initially took this public position long before the Delgamuukw decision and other recent court decisions on Aboriginal rights and title. NGR's owners continue to maintain that they respect the rights and historical presence of the St'at'imc people in the project area, and have sought First Nations support since 1992.

NGR has made many commitments which are intended to address St'at'imc concerns with respect to resort development, and these are documented throughout this report in the relevant issue sections. NGR's traditional use commitments and other strategic commitments intended to ensure that St'at'imc communities benefit from resort development are outlined below.

With respect to the preservation of heritage resources, in addition to the commitments outlined in section 6.6.2 - Archaeological Resources, the proponent has committed to:

- limit the communication of information to site personnel and the public on the whereabouts of any located historical sites; and
- restrict the use of signage.

To mitigate potential impacts on First Nations traditional use of the Melvin Creek area, the proponent has also committed to:

- work with St'at'imc and MELP to determine whether a controlled deer hunt of limited (2-3 week) duration for St'at'imc members would be possible in the upper Melvin Creek valley;
- ensure that St'at'imc people continue to have access to the Melvin Creek valley for traditional gathering activities, and to maintain areas of ethnobiological significance for these purposes;
- support a 'no firearms' policy within Melvin Creek, except for possible controlled St'at'imc hunting;
- discourage access to other adjacent valleys by resort visitors and guests; and
- not develop any trail system which links adjacent valleys.

Beyond that, NGR's primary ability to mitigate any effects on First Nations traditional use, rights and title is connected with ensuring that economic benefits of project development are shared with St'at'imc communities as follows:

- make reasonable efforts to include, as terms of any purchase agreement with third parties, the best possible contractual obligation to have third parties employ First Nations members where possible;
- if the resort proceeds, pay land use fees to St'at'imc;
- support allocation of some land use fees paid by NGR to St'at'imc to partially fund a housing trust or fund or other such funds as the St'at'imc deem necessary;
- meet infrastructure commitments for wastewater disposal and domestic water supply per those outlined by First Nations and per MELP's requirements;

- make reasonable efforts to reach benefit agreements with the St'at'imc, and to work especially close with Bands which are most directly impacted (i.e. Mount Currie, Cayoose Creek, Lillooet and N'Quat'qua);
- explore and negotiate with relevant and willing First Nations consultation protocols which will provide for the establishment of an environmental management mechanism and for continuous development communication with interested First Nations communities;
- continue to work in good faith with First Nations to identify and respond to issues identified in the EA process;
- negotiate an economic benefits agreement which would include provisions for construction and operations-stage employment, student employment and co-ops, business opportunity notification, and make best efforts to include these same provisions in third-party agreements;
- entertain equity partnerships and joint ventures as identified by the First Nations;
- make reasonable efforts for direct purchase from First Nations and neighbouring communities and their businesses;
- provide First Nations with assistance in strategic planning for non-project marketing activities;
- participate with any on-going marketing or community liaison committees; and
- provide First Nations with development sites (at cost) for businesses owned and operated by First Nations.

For purposes of monitoring and ensuring implementation of these commitments, NGR will commit to undertake the following:

- report progress annually to the Minister of Environment, Lands and Parks and the Minister of Aboriginal Affairs;
- report with respect to any agreements around First Nations employment and commercial opportunity participation to the Minister of Aboriginal Affairs and each Band;
- issue reports to the EAO annually until at least Phase Two project construction is completed, or longer if deemed necessary by EAO and First Nations participants; and
- agree that, if the project is granted an EA certificate, the certificate would be amended in the future to include any subsequent agreements with First Nations members.

Status of Issue at Time of Referral to Ministers (6.6.1)

Government is now assessing Aboriginal rights and title issues, taking into account information collected during the EA review through studies filed, comments received, consultations undertaken and impact prevention/mitigation plans proposed. The project committee has helped to inform assessment of the implications of the project for First Nations traditional uses (e.g. hunting, gathering) by evaluating and documenting its findings on project-specific information and on a variety of potential project-related impacts. As noted in section 8.3 with respect to sustainability issues:

- **First Nations** –The project committee has given careful consideration to St'at'imc traditional use concerns, and the record of the committee's consideration of these issues is documented in the relevant issue sections of this report. First Nations have provided information which indicates that some limited traditional hunting and gathering use has been made of Melvin Creek in the past, and that such use may be impacted by the project. In evaluating impacts, the project committee has taken into account the measures proposed by NGR to mitigate and/or compensate for adverse wildlife and vegetation impacts, and to limit access into and out of the Melvin Creek drainage, and also the large size of the claimed St'at'imc traditional territory. The project committee has concluded that potential adverse impacts on the traditional use of wildlife and plants by St'at'imc people can be either prevented or significantly mitigated by means of measures proposed by NGR, and that development of the project will not affect the role of traditional uses in sustaining St'at'imc culture to any significant extent. If St'at'imc communities choose to participate economically in the project, their sustainability could also be affected in a positive sense. NGR, in keeping with its commitment to work with First Nations, has offered substantive opportunities for First Nations participation in the project's economic benefits. This has the potential to offset still further any residual adverse effects on traditional uses, while diversifying the economic basis for sustaining St'at'imc communities. Approaches to the various socio-community issues raised in the St'at'imc studies are suggested at appropriate points in this report. One St'at'imc Band is currently engaged in discussions with the province and NGR with respect to its interests and concerns (i.e. impacts on traditional uses and Aboriginal rights, and potential economic benefits). Other St'at'imc Bands have recently stated their opposition to the resort proposal.

6.6.2 ARCHAEOLOGICAL RESOURCES

Issue(s) (6.6.2)

Issues identified included:

- identification of measures to avoid or mitigate potential impacts to archaeological site EdRn 1;
- the potential need for an archaeological study of the so-called 'baselands' area along Cayoosh Creek; and
- First Nations concerns about the adequacy of NGR's archaeological assessments.

Content of Application (6.6.2)

Two separate archaeological reports prepared by Antiquus Archaeological Consultants Inc. (Antiquus) were included in section 15 of the application – an Archaeological Overview Assessment (AOA) and an Archaeological Impact Assessment (AIA). The AOA, entitled *An Overview Assessment of Archaeological Resource Potential Associated with the Cayoosh Resort Recreational Development Project Area* (July 1, 1992), identified several areas with medium or high archaeological site potential

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in the upper Melvin Creek valley. The report recommended that a subsequent AIA be conducted for the areas identified in order to ensure that all archaeological concerns were recorded, assessed and properly managed prior to initiation of resort development.

The AIA, entitled *An Archaeological Impact Assessment For The Proposed Cayoosh Resort Recreational Development Project Area* (HCA Permit 1993-102), dated March 15, 1993, described the more detailed archaeological assessment undertaken in the Melvin Creek valley. One prehistoric archaeological site (EdRn 1) was located within the project development area. This site was identified as a small, short-term hunting field camp. Since the site contained information which could reveal its age and function, and little was currently known about the prehistoric upland use in the region, the site was given an overall 'medium' heritage significance value. The recommended management for this site was to avoid it during all land-clearing activities. If this option was not considered feasible, and the site would be disturbed or destroyed by the development, the alternative management measure would be to initiate a systematic data recovery program at the site, prior to the commencement of land-altering activities.

No further archaeological resources were identified within the remainder of the development property, and the potential for additional archaeological sites was considered low.

Agency Review Comments on Application (6.6.2)

The Archaeology Branch of MSBTC reviewed the Antiquus reports and provided comments in a memo dated December 10, 1996. MSBTC stated that the potential effects of the project on archaeological site EdRn 1 needed to be outlined in more detail, with a statement on how NGR proposed to manage adverse impacts. It was further noted that the 1993 assessment did not address the 'base lands' area of the proposed resort. That area was identified as the location for the potential service/recreation base and golf course. The base was situated alongside Cayoosh Creek, northwest of its confluence with Melvin Creek. MSBTC stated that, if that area was proposed for development, NGR would be required to conduct an AIA.

Proponent's Responses to Agency Comments on Application (6.6.2)

NGR responded to MSBTC's comments in a letter dated May 9, 1997. With respect to site EdRn 1, NGR confirmed that the site would be located on a proposed ski trail, but that no buildings, lift towers or earth movement would affect the site, thus, it would be maintained in its natural state. NGR also indicated that some of the St'a'imc Nation Bands had requested additional archaeological and traditional land use studies for the area. However, the details of this additional work had not yet been determined. NGR committed that site EdRn 1 would not be disturbed, and would be protected in keeping with the Archaeology Branch requirements, with the co-operation of, and to the satisfaction of, the St'a'imc Nation.

NGR explained that the original resort proposal included the development of a junction post and 'base land' development along the Duffey Lake road. However, the SLRD, in its corridor land use plan, recommended that no settlement be considered along the Duffey Lake road between Pemberton and Lillooet. Consequently, NGR confirmed that the 'base lands' aspect of the development had been withdrawn from its application.

Project Report Specifications (6.6.2)

The project report specifications for this issue were based upon the requirements outlined in MSBTC's July 2, 1997 letter. In that correspondence, MSBTC acknowledged that, since NGR had withdrawn the 'base land' development proposal, it was no longer an issue. Regarding site EdRn 1, NGR was requested to provide a management plan which would satisfy the Archaeology Branch that impacts would be avoided during resort development and operation (F.1#1). Additionally, MSBTC noted that any future changes to the original routing of the proposed access road could warrant additional archaeological studies, if the revised alignment fell outside the corridor originally proposed and assessed in 1992 (F.1#2). Those studies would need to be included in the project report.

Issue Treatment in Proponent's Project Report (6.6.2)

The 1993 Antiquus AIA was included in Volume 1, section 7 of the project report. In Volume 2, section F, NGR included a letter report from Antiquus (April 2, 1998) which provided further recommendations for the management of site EdRn 1. Since no site clearing or construction activities were proposed for the area, the report noted that the only potential impact would be from public visitation and disturbance of the site. In order to manage this, the report recommended: (1) no disclosure of the location of the site to staff, the public or resort guests; (2) no construction of new trails, or use of existing trails within 50 m of the site; (3) no use of motorcycles or ATVs near the site area; and (4) halting any person caught disturbing the site. The report indicated that it would not be necessary to take more extreme mitigation measures, since the outlined recommendations should ensure that the integrity of the site is maintained.

NGR noted that the access road alignment had not changed since the originally-proposed 1992 routing. Until the road reaches the 1400 m elevation in the upper part of the valley, it is predominantly located on steep, rocky side-slopes. NGR also stated that the access road area had been reviewed and considered to be of low archaeological site potential.

Agency Review Comments on Project Report (6.6.2)

In its October 14, 1999 correspondence, MSBTC indicated that the project report had satisfactorily addressed all issues relevant to the mandate of the Archaeology Branch.

Proponent's Responses to Agency Comments on Project Report (6.6.2)

Since no further concerns were identified, NGR provided no further comment on this issue.

Public Comments on Issue and Project Committee's Position (6.6.2)

Members of the public did not submit specific comments with respect to archaeological resource issues.

First Nations Comments on Issue, Proponent's Responses and Project Committee's Position (6.6.2)

A. Creekside's Archaeological Report

On March 28, 2000, Creekside, on behalf of the St'at'imc Chiefs, provided a report entitled *Review of Archaeological Studies regarding Proposed Cayoosh Creek Project*, dated March 24, 2000, and prepared by Sue Montgomery.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. In an April 7, 2000 letter from Chief Mike Leach, the status of this report was described as a draft which may need further work, once the *Cultural Heritage Study Final Report* is completed.

Comments on Archaeological Overview Assessment (AOA)

The Montgomery report noted the following with respect to the July 1992 AOA by Antiquus:

- it presented an analysis of archaeological potential which was reasonable at the time it was produced;
- the senior and secondary authors are considered experienced;
- the archaeological predictive model was based on criteria and interpretations consistent with archaeological practice at that time;
- it is now standard archaeological practice to work closely with First Nations to develop archaeological predictive models;
- in this case, St'at'imc Elders, especially hunters, can contribute key personal knowledge of Melvin Creek; and
- since Antiquus did not collaborate with St'at'imc in developing its predictive model, the AOA may have failed to identify some areas of high and moderate archaeological potential in the Melvin Creek valley.

Comments on Archaeological Impact Assessment (AIA)

The Montgomery report noted the following with respect to the August/September 1992 AIA by Antiquus (dated March 15, 1993):

- Antiquus did not identify the repository for the artefacts removed from site EdRn 1;
- recently-used hunting blinds should have been accorded the status of archaeological sites, whether or not they date back to pre-contact times;
- the date of 1846 in the *Heritage Conservation Act (HCA)* for protection of sites is not a valid archaeological definition;
- the author disagrees that the hunting blinds are not of aboriginal origin – several St'at'imc hunters use Melvin creek, and the blinds were probably created by St'at'imc people;
- the presence of historic artefacts does not disprove use far into the past;
- a trail which has "...likely been used by animals and people for hundreds of years..." should be considered an archaeological site;

- the author has seen a campsite which is not mentioned in the AIA, and an Elder who saw a video of the stove at the site identified it as being of the type used by St'at'imc hunters;
- one interviewee stated that he has seen culturally modified trees in Melvin Creek, although none are identified in the AIA; and
- all of the Antiquus interpretations were made without St'at'imc input.

Key Concerns and Recommendations

1. FIRST NATIONS ISSUE:

The Montgomery report disagrees that the identified hunting blinds are not of aboriginal origin. Several St'at'imc hunters use Melvin Creek, and the blinds were probably created by St'at'imc people. Recently-used hunting blinds should have been accorded the status of archaeological sites, whether or not they date back to pre-contact times. Any potential resort impacts on them should be assessed, and if necessary, mitigation proposed. The date of 1846 in the HCA for protection of sites is not a valid archaeological definition. The presence of historic artefacts does not disprove use far into the past.

PROPONENT RESPONSE:

The hunting blinds appear to be established in locations where hunting would have to be carried out with rifles. NGR's own examination of these hunting blinds indicated that there were pieces of poly used for waterproofing hunters as they lay or crouched in the blinds, which demonstrates modern use. It is possible that these blinds have a longer history. NGR is prepared to accept that they should be recorded as archaeological sites. There is no conflict between the location of these blinds and any resort lift or trail locations.

PROJECT COMMITTEE POSITION:

Without hard evidence to indicate that the hunting blinds predate 1846, the features are not subject to the provisions of the HCA. NGR's responses to the Montgomery report tend to suggest a more recent origin and use. Nonetheless, the blinds are, by definition, 'archaeological', and can be recorded as such, keeping in mind that this would not result in their protection under the HCA, nor would they become subject to regulation by the Archaeology Branch.

2. FIRST NATIONS ISSUE:

A trail which has "...likely been used by animals and people for hundreds of years..." should be considered an archaeological site [Note - this is a game trail identified as being 700 m southeast of site EdRn 1 – i.e. on the north side of the Melvin Creek valley, above the proposed Upper Village]. The trail should be recorded as an archaeological site, potential resort impacts should be assessed, and if necessary, mitigation proposed.

PROPONENT RESPONSE:

NGR is aware of only two present-day trails into Melvin Creek: (1) the main trail coming upvalley from Cayoosh Creek; and (2) a second trail from the Haylmore and Barkley valleys. In NGR's discussions with the guide/outfitter, Mr. Leo Ouellet, he indicated that he, with a crew of seven or eight men, constructed the main trail from

Highway #99 over a period of nine days in the mid-1970s. They did not see any traces of a historical trail. He also used the lower portion of the fire-break road constructed by MoF. He believes that, prior to his crew constructing the trail in the mid-70's, there was no trace of a previous trail at the current trail's location. Some years later, in the early 1980s, he flew into the valley by helicopter with equipment and men, and built the hunter's cabin over a four-day period. Mr. Ouellet reasoned that aboriginal hunters would be more likely to have used the high alpine areas for travel, since the lower valley areas were much more difficult to traverse, due to heavy undergrowth along the wet areas and considerable blowdown in forested areas. NGR is prepared to review trail location with the St'at'imc archaeological team to avoid conflicts where possible, and would like to involve Mr. Ouellet in resolving the trail issue. The second trail was constructed by a mining company carrying out exploration work, although there is anecdotal evidence that prior to the construction of the mining road, a trail did exist from the D'Arcy area into the upper Barkley valley and adjacent drainage to Melvin Creek. As a result of logging and mining activities in the upper Haymore and Barkley valleys, this trail is not now physically detectable. In the upper Barkley valley, a historical trail is clearly detectable. The origins of this trail are not known to NGR. This valley was home to a religious group in the late 1960s or early 1970s. In any event, the trail does not connect to Melvin Creek, but continues to the headwaters and over into the Duffey Lake/Cayoosh Creek drainage (Hurley Silver Mine Road). There is also written evidence about First Nations gathering in the Haymore valley. The present-day trail up from the Barkley valley to the Lower Twin Lakes follows a road constructed by bulldozer.

PROJECT COMMITTEE POSITION:

Without hard evidence to indicate that identifiable trails predate 1846, these trails are not subject to the provisions of the HCA. NGR's responses to the Montgomery report also tend to suggest a more recent origin and use. However, any trail developed and/or used by First Nations and/or any other party historically would be, by definition, 'archaeological', and could be recorded as such, keeping in mind that this would not result in its protection under section 13 of the HCA (*Heritage Protection*), nor would it become subject to regulation by the Archaeology Branch.

3. FIRST NATIONS ISSUE:

The areas of moderate potential in the valley bottom should be re-surveyed, given that archaeological sites consistent with a trapper's camp are known to be there. The author has seen a campsite, including an old iron stove, trap parts and plywood. Yet this is not mentioned in the AIA. An Elder who saw a video of the stove at the site identified it as being of the type used by St'at'imc hunters. Potential resort impacts should be assessed, and if necessary, mitigation proposed.

PROPONENT RESPONSE:

NGR discussed these observations with Mr. Leo Ouellet, who indicated that, at the bottom of the big slide near his cabin, he had set up a tent camp near Melvin Creek, prior to construction of the cabin. He indicated that there were no trapping parts at

his campsite, but that he had flown plywood to the site by helicopter, and had packed plywood tables to the same site. It is not certain that this is the same location described by St'at'imc archaeologists, and this needs to be confirmed.

PROJECT COMMITTEE POSITION:

The presence of one or more trapper's campsites, together with blinds and game trails, lends support to St'at'imc claims concerning their traditional use of the area. However, while raising questions, the St'at'imc report does not convincingly demonstrate that the 1992 AIA was deficient in failing to identify and adequately assess areas of high and moderate archaeological potential which would be in conflict with the proposed resort development. The project committee is satisfied that NGR's archaeological investigations are adequate for HCA reporting purposes. The St'at'imc report raises issues connected with traditional use of specific features and sites which are potentially more recent than 1846. Such issues should have been more fully explored in the existing government-funded report. Having said that, St'at'imc and NGR may wish to conduct further investigations to confirm either their aboriginal or non-aboriginal origin and use. The project committee is satisfied with NGR's commitments to work with St'at'imc archaeologists to clarify any uncertainties in this regard.

4. FIRST NATIONS ISSUE:

The areas of moderate potential in the valley bottom should be re-surveyed, given that culturally modified trees (CMTs) are believed present. One interviewee stated that he has seen CMTs in Melvin Creek, although none are identified in the AIA.

PROPOSER RESPONSE:

NGR and its consultants working in the valley have not reported any CMTs. Additional work is needed on this issue, and NGR is prepared to work with the St'at'imc archaeologists to re-examine the valley bottom areas to confirm the presence of any CMTs and, if possible, mitigate any potential conflicts with resort development. In NGR's interview with Mr. Ouellet, the guide/outfitter, he indicated that he had not seen any tree modification attributable to human activity.

PROJECT COMMITTEE POSITION:

It is uncertain whether or not aboriginal forest use sites (i.e. CMTs) occur in the Melvin Creek valley. The St'at'imc reports do not cite firm evidence in this regard, while Antiquus has confirmed for the project committee that it did look for CMTs during its 1992 surveys, but found none. The reported presence of CMTs in the St'at'imc study might or might not be linked to historical trapping and hunting use of the valley, connected with the relatively recent construction of various trapper campsites, cabin(s) and trails. If of recent origin, they would not be protected under the HCA. If a follow-up archaeological study is considered, Ainsworth may also want to address this as part of its licensing requirements. The possible need for a follow-up archaeological assessment to resolve this can be addressed as a condition of EA certification, if the project is approved, and in conjunction with the approval requirements for Ainsworth's logging application. If CMTs are present, they are not likely to represent a significant archaeological resource, and any impacts can normally be managed through basic data collection.

5. FIRST NATIONS ISSUE:

The Antiquus AIA does not identify the repository for the artefacts removed from site EdRn 1. Their location should be determined, and the artefacts returned to the St'at'imc for curation.

PROPONENT RESPONSE:

As was reported in earlier NGR submissions, the artefacts discovered by NGR's consultants were filed with the Archaeology Branch in Victoria, and are presently held by the province. NGR would recommend that the St'at'imc contact the Branch with respect to the return of these artefacts.

PROJECT COMMITTEE POSITION:

The artifacts are not held by the province. They are housed at the Museum of Archaeology and Ethnology, Simon Fraser University, per the terms and conditions of the HCA permit issued in 1992. Permit applicants are required to arrange for a repository for materials collected under permit prior to permit issuance. An approved archaeological storage facility must be able to provide: (1) physical and financial security for long-term storage of artefacts; (2) proper facilities and training for the curation of artefacts; and (3) access to the material for study by interested researchers. At the time of the study, the St'at'imc did not have such a facility. Since then, Creekside Resources Inc. has become a recognised local repository, and can arrange for a transfer of the artefact assemblage with the current repository on behalf of the St'at'imc at any time.

6. FIRST NATIONS ISSUE:

All Antiquus AOA interpretations were made without St'at'imc input. The archaeological predictive model should be revised, using expertise from St'at'imc hunters and others who frequent the Melvin Creek area. The predictive model should be cross-correlated with traditional use maps created from the interviews conducted with St'at'imc people for the *Cultural Heritage Study*. Additional areas of high and moderate potential which may be affected by the resort should be investigated through systematic inventory, shovel testing and evaluative testing. A report should be prepared describing the results of additional field investigations, and providing mitigative recommendations for any sites located. The St'at'imc should approve the selection of the archaeologist to implement the above recommendations, be involved in developing the research design and any mitigation options, and be part of the field crews.

PROPONENT RESPONSE:

NGR is prepared to work with the St'at'imc archaeological staff to establish a plan which would investigate each and all sites proposed for disturbance prior to any site disturbance. Where possible, this investigation would be carried out in the season prior to the planned disturbance. NGR is supportive of mutual selection of the archaeologist. A working plan and mitigation should be put in place by the archaeologist. NGR agrees that St'at'imc participation in the field crews is important.

PROJECT COMMITTEE POSITION:

The project committee considers NGR's commitment to further work in co-operation with St'at'imc to be a constructive approach to St'at'imc archaeological site concerns. The choice of archaeological consultants and selection of the field crew are not regulatory permitting matters. They are a matter between the permit applicant, his or her clients, and First Nations. If additional archaeological investigations are proposed by NGR, or are warranted to check additional concerns (e.g. possible presence of CMTs), an application for a HCA permit would be necessary. In accordance with normal procedure, the application would be forwarded by the Archaeology Branch to affected First Nations for comment on the proposed study methodology. MSBTC considers the Antiquus AOA and AIA reports to be acceptable, and does not require additional studies to satisfy HCA requirements, with the possible exception of the need to clarify the CMT issue. If a follow-up archaeological study is warranted, Ainsworth should also be addressing this need as part of its licensing requirements. The possible need for a follow-up archaeological assessment to resolve this can be addressed as a condition of EA certification, if the project is approved, and in conjunction with the approval requirements for Ainsworth's logging application.

B. Impacts on Archaeological Resources (Kennedy/Bouchard Study)

On June 12, 2000, the EAO received a report from the Xaxli'p (Fountain) First Nation, dated May 9, 2000, and entitled *Sta'at'imx Use of the Duffey Lake Area including the Melvin Creek Watershed*.

The report makes the following points with respect to specific archaeological features in the vicinity of the Melvin Creek drainage:

- A prehistoric archaeological site – site EdRn 1 - dated at ca. 3500-2000 BP, was discovered in 1992 in the alpine area of the Melvin Creek valley (Note - during the Antiquus studies for NGR). The site, located north/northeast of Melvin Lake, was probably utilised as a short-term base camp for hunting or as an observation post for monitoring mountain goat movements.
- An 'Indian Camping Ground' was noted on a sketch map prepared by Sapper James Duffey (1860) where Melvin Creek enters Cayoosh Creek. No descriptive information was provided regarding this camp, suggesting that it was not occupied at that time. [Note - Although there were traces of the campsite in 1860, it is not clear that the exact location is known at this time].

1. FIRST NATIONS ISSUE:

[Note - The Fountain report did not specifically raise archaeological site impact concerns associated with the proposed resort.]

PROJECT COMMITTEE POSITION:

As regards the cited archaeological site (recorded by MSBTC as site EdRn 1), the project committee is satisfied that NGR's proposed impact management measures will preserve the site intact. As regards the report of an 'Indian Camping Ground', it is not clear from the Fountain report that any trace of this feature remains today, or

that the site is literally at the mouth of Melvin Creek, as described, since no map was provided. It appears that its location was on the north side of Cayoosh Creek since: (1) Melvin Creek joins Cayoosh Creek from the north; and (2) Sapper Duffey is reported to have travelled up Cayoosh Creek on its north side. Antiquus have confirmed that, during its 1992 surveys, it found no trace of archaeological artifacts in the lower sections of the proposed access road, which suggests that either no trace remains or else the camp may have been located closer to the mouth of Melvin Creek. If located at the mouth of Melvin Creek, it should not be directly disturbed by resort development.

Proponent's Commitments Relevant to Issue (6.6.2)

The proponent has committed to:

- undertake no summer grooming terrain alterations at site EdRn 1;
- not inform staff, members of the public or resort guests of site EdRn 1, and offer no lectures, cultural tours or signage to identify this site;
- construct no summer trails nor use any existing trails that pass within 50 m of archaeological site EdRn 1, and not to carry out any form of grooming which would result in altering the ground surface (**Note** - No motorcycles, ATVs or bicycles will be permitted on or within the site area);
- make the key project management team aware of the construction prohibition and restricted activity levels for site EdRn 1;
- if archaeological material is inadvertently encountered during project construction, immediately suspend all land-altering activities in the vicinity of the project site, and contact the Archaeology Branch, MSBTC (**Note** - The need for remedial archaeological work will require a *Heritage Conservation Act (HCA)*, section 14 permit. A section 12 permit will otherwise be required to authorize alterations to the site);
- work with St'at'imc archaeologists (if St'at'imc is willing to do so) to clarify the origin and use (whether Aboriginal or non-Aboriginal) of specific sites, facilities and features where origin and use are deemed uncertain;
- work with St'at'imc staff (if St'at'imc is willing to do so) to document those archaeological features present within the Melvin Creek drainage which are not subject to the provisions of the *HCA*; and
- work with the St'at'imc archaeologists (if St'at'imc is willing to do so) to re-examine Melvin Creek valley bottom areas to determine any presence of culturally modified trees and, if possible, to mitigate any potential conflicts with resort development.

Status of Issue at Time of Referral to Ministers (6.6.2)

The project committee considers archaeological resource issues resolved for the purposes of the EA certification decision. As noted in section 8.3 with respect to sustainability issues:

- *Archaeological sites* - Impacts on archaeological resources which are subject to the *Heritage Conservation Act (HCA)* are not expected, since few sites would be expected to occur in the Melvin Creek valley. Approved management measures will protect the only known site in the area. First Nations have identified concerns with respect to sites and features which appear to be more recent than 1846, and

therefore not subject to protection under the HCA. NGR has committed to work with St'at'imc Bands (if the Bands are willing) to locate any such features not already identified, and develop plans to protect them from resort-related impacts.

6.7 LAND USE PLANNING CONSIDERATIONS

6.7.1 RELATIONSHIP OF EA PROCESS TO LAND USE PLANNING PROCESSES

The EA process is strictly a project-specific review mechanism. It has not been designed for land use planning purposes and has no jurisdiction to perform this function.

The interface between the EA process and land use planning processes is that the EA process assesses projects within the context of the prevailing land use policy and planning framework of an area. Where a recognised land use plan exists, the EA process evaluates the degree of compatibility of a development proposal with any specific land use planning objectives set in the vicinity of that development, whether set by the province or by local government. The weight given to this part of the assessment would depend on the status of the plans in question - Are they confirmed government policy? Do they have the force of law? Are they in the early development stage only, or still under discussion? The land use planning context for the review of the Melvin Creek/Cayoosh project is outlined below (see section 6.7.2 - *Planning Context for Project Review*).

The EA process also examines the effects of projects on adjacent land uses, determining the degree to which adjacent pre-existing land uses may be affected by the proposed development. For example, for specifics with respect to the report proposal, see above, section 6.3.

The EA process, in reviewing projects, is not expected to await the outcome of planning processes which have yet to be completed. While British Columbia is moving as quickly as possible to complete land use plans across the province (e.g. through the former CORE planning tables, the Protected Areas Strategy and the Land and Resource Management Planning [LRMP] process), it will be several more years before plans are completed for all areas. In the meantime, government recognises that, in the absence of plans or where plans are incomplete, development decisions must continue to be taken, using the best available information and in the context of responsible stewardship and the prevailing land use regime.

In such cases, review mechanisms such as the EA process and the *Forest Practices Code* are being employed to review proposed developments, taking account of the environmental and socio-economic implications of such development with respect to existing land use commitments. Where planning is underway, a project committee set up under the EA process will take account of any plans or planning objectives which are newly affirmed in mid-review in preparing recommendations for Ministers on whether or not a project under review should be granted a project approval certificate.

6.7.2 PLANNING CONTEXT FOR PROJECT REVIEW

6.7.2.1 OVERVIEW

There is no formal land use plan for provincial Crown land use in the vicinity of the proposed resort. However, in 1995, an LRMP process commenced for the Lillooet Forest District within which the project lies.

The Land Use Co-ordination office (LUCO) has advised the project committee that, at the time of this referral to Ministers for an EA certification decision on the resort proposal, the Lillooet LRMP process has not led to any formal planning decisions by the provincial government. Had the LRMP been approved *prior* to the completion of the project report review stage of the EA process, the project committee would have taken into account any provisions which were relevant to the resort development in formulating its conclusions and recommendations for Ministers.

6.7.2.2 LAND AND RESOURCE MANAGEMENT PLANNING (LRMP) PROCESS

The LRMP process is the sub-regional integrated resource planning process for British Columbia. LRMPs cover sub-regional areas of approximately 15, 000 to 25, 000 square kilometres, generally corresponding to Timber Supply Area boundaries (one or more Forest Districts). The goal of the LRMP process is to provide a consistent, fair opportunity for all stakeholders and interest groups (industry, environmental groups, labour), local and regional governments and First Nations to participate with provincial government ministries in decisions on how Crown land will be managed. (*Note* - Land-use decisions resulting from LRMP processes are without prejudice to the rights and interests of First Nations or treaty negotiations). LRMP processes involve a comprehensive assessment of all resource values and socio-economic implications, and recommendations are arrived at through interest-based negotiation and consensus. When approved by cabinet, LRMPs establish direction for land use and specify broad resource management objectives and strategies.

6.7.2.3 LILLOOET LRMP PROCESS

The Lillooet LRMP process is seen as one component of the Provincial Land Use Strategy. The purpose of the LRMP is to provide strategic land and resource management direction for activities occurring on Crown land within the planning area. The approved LRMP will guide many lower-level planning processes including, but not limited to, landscape unit planning and operational plans developed under the *Forest Practices Code of British Columbia Act*. The planning process is being guided by the principles outlined in *Land and Resource Management Planning: A Statement of Principles and Process*, prepared by the Integrated Resource Planning Committee.

The Lillooet LRMP process covers MoF's Lillooet Forest District, which encompasses approximately 1.1 million hectares, including just over 107,000 hectares in the Stein Valley Provincial Park. The area also includes the Yalakom valley, the Southern Chilcotin Mountains, the Fraser River from South French Bar near Clinton to an area near Boston Bar, and the Thompson River from Spences Bridge to Lytton.

The LRMP planning table (Table) is expected to recommend to government how all Crown lands in the area will be used, by proposing resource development zones and protected areas, and by specifying resource management objectives and strategies to guide resource conservation and development over the decade following plan approval. The table is also considering the social and economic implications of land use designations, and is expected to submit an economic transition strategy as part of its recommended plan to government.

Past History of Lillooet LRMP - Between 1992 and 1995, an interagency Regional Protected Areas Team (RPAT) identified "areas of interest" totalling 24% of the Lillooet Forest District landbase to provide a range of choices for satisfying the Protected Areas Strategy (PAS). In November 1995, the provincial government established the Stein Valley Nlaka'Pamux Heritage Park (10% of the District landbase), and initiated the Lillooet LRMP. The higher-value Protected Area candidates (a further 8% of the District landbase) were afforded Study Area interim protection status to keep options open during the LRMP process. The lower-ranked areas of interest identified by the RPAT were left open to resource development to reduce short-term economic impacts.

Current Status of Lillooet LRMP - Prior to the announcement of the LRMP, the Lillooet District Community Resource Board, a local initiative of community representatives, had begun to lay the groundwork for the planning process. After a lengthy organisational period, the Lillooet LRMP table began its planning work in 1997. Representation included Community Resource Board members, stakeholder sectors, interest groups based outside the District, local government, provincial and federal agencies and several First Nations. Following an information presentation phase, the table began work on draft text for the plan in 1999 and reached the scenario development stage by late in that year. The process is currently focused on reaching a common understanding about the intent and implications of the draft text language, and on defining and measuring the alternatives available. With these steps completed, table members can negotiate the social choices which will be represented in their final plan recommendations to government sometime later in 2000.

6.7.2.4 RELATIONSHIP OF LILLOOET LRMP TO EA REVIEW OF PROJECT

Before the Lillooet LRMP was announced, the Kamloops Regional Protected Areas Team had identified a Cayoosh "area of interest", including Lost Creek and Melvin Creek. The overall area was considered a "Priority 2" candidate, containing specific Protected Area values and offering an alternative to other areas such as the Stein Valley and Spruce Lake in terms of ecological representation. Although PAS "Area of Interest"

status imposed no formal constraints on any resource activity or tenuring, government recognised that it could affect the viability of privately funded investigations of other land use potentials such as commercial recreation development.

To provide a fair opportunity for the Melvin Creek/Cayoosh ski development proposal to be investigated and evaluated, Cabinet directed in April 1995 that Melvin Creek should be deleted from the Cayoosh area of interest. With no certainty around the timing of a Lillooet LRMP, this direction allowed evaluation of the ski development proposal to proceed under the *EA Act* review process, rather than to stifling further work on the proposal by leaving the area as part of a PAS candidate for eventual consideration in the LRMP process. The decision allowed the remainder of the Cayoosh Area of Interest to stand alone, left comparable representation alternatives for protection still available to an LRMP, and ensured that an EA evaluation of the ski development proposal would give detailed consideration to the same wildlife and recreation values identified by the RPAT as meriting protection.

With the creation of the Stein Valley Nlaka'Pamux Heritage Park at the time the Lillooet LRMP was announced, the Cayoosh Area of Interest and other "Priority 2" PAS candidates were not afforded interim management as Study Areas in order to reduce economic impacts within the community.

In assigning evaluation of the Melvin Creek ski development proposal to the EA process, Cabinet ensured that the project would not be dealt with separately in two parallel planning processes. NGR first submitted a formal "Expression of Interest" to BC Lands in August, 1990 under CASP. In February, 1992, they were awarded sole proponent status, giving NGR exclusive rights to study the feasibility of developing a major ski resort in Melvin Creek. NGR's formal application to EAO was filed in late 1996. The EAO project committee understands that the LRMP table will factor the findings of the EA review of the resort project into its recommendations for management of adjacent areas. Thus, it is intended that the LRMP will include land use provisions intended to address any anticipated external effects of the resort in drainages surrounding Melvin Creek. The LRMP will not make any decisions for the Melvin Creek drainage that would contradict the decision of the EA Review or CASP process.

6.7.2.5 PUBLIC COMMENTS ON ISSUE AND PROJECT COMMITTEE'S POSITION

1. PUBLIC COMMENT:

Cabinet should not have intervened in the LRMP process by directing the elimination of the option to consider protected area status for the resort development site in the Melvin Creek drainage.

PROJECT COMMITTEE POSITION:

This Cabinet direction predates the EA review of the project and it is not within the purview of the project committee to address the matter. The project committee knows of no grounds to dispute the right of Cabinet to make of policy decision of this nature.

2. PUBLIC COMMENT:

Duffey Lake/Cayoosh Creek area should be maintained as a wilderness recreation area.

PROJECT COMMITTEE POSITION:

In the broader sense, this issue is a land use planning matter which does not fall within the purview of the project committee. With respect to the resort proposal itself, the project committee has proceeded with the EA review of the project within the land use context established before the review began.

3. PUBLIC COMMENT:

Should establish provincial park in the area if project is approved.

PROJECT COMMITTEE POSITION:

It is not within the purview of the project committee to address this land use planning matter. The matter is best addressed to the LRMP Table.

4. PUBLIC COMMENT:

Government should impose a land use designation for drainages along Duffey Lake corridor that protects the values of non-motorised recreation.

PROJECT COMMITTEE POSITION:

It is not within the purview of the project committee to address this land use planning matter. The matter is best addressed to the LRMP Table.

5. PUBLIC COMMENT:

A moratorium should be placed on issuing licenses or granting leases for all areas within helicopter or snowmobile range of Melvin Creek.

PROJECT COMMITTEE POSITION:

It is not within the purview of the project committee to address this land use planning matter, except to the extent that such activities could originate from the resort. For activity originating elsewhere (i.e. non-resort-related), the matter is best addressed to the LRMP Table.

6. PUBLIC COMMENT:

Need to restrict development along Duffey Lake Road to existing towns.

PROJECT COMMITTEE POSITION:

To the extent that this is a comment about the resort proposal, the land use planning context for reviewing this project is outlined above. To the extent that this comment is applicable to potential activity anywhere along the entire corridor (i.e. non-resort-related), it is not within the purview of the project committee to address the matter. The matter is best addressed to the LRMP Table and, in the case of private land, to relevant local government jurisdictions.

7. PUBLIC COMMENT:

Provincial government should develop a land use plan for the area before the resort is considered.

PROJECT COMMITTEE POSITION:

As noted above, it is not government policy for EA reviews to await the outcome of land use planning processes – see section 6.7.1.

6.7.2.6 FIRST NATIONS COMMENTS ON ISSUE AND PROJECT COMMITTEE'S POSITION

Traditional use of the project site and surrounding area is discussed in the March 24, 2000 report entitled *Cultural Heritage Study Final Report*, by Sue Montgomery.

Note - On advice from St'at'imc legal counsel, the study is considered a draft, since it has not been approved for release by the St'at'imc Chiefs, and any reliance on it is recognised to be at government's own risk. According to an April 7, 2000 letter from Chief Mike Leach on behalf of St'at'imc, its current status is that it is considered incomplete by St'at'imc Chiefs, requires more research, and therefore is not approved by them.

1. FIRST NATIONS ISSUES:

Comments in the report have implications for the Lillooet LRMP and land use planning in general. Among the points made in the report, which is discussed in more detail in section 6.6.1, are the following potential approaches to mitigation of impacts of resort development on First Nations:

- In drainages adjacent to Melvin Creek, consideration could be given to the transfer of all current provincial tenures, including backcountry recreation permits, wildlife management areas, protected areas, forestry tenures, provincial parks and other Crown land transfers to the St'at'imc, on the basis of fee simple ownership.
- St'at'imc could then develop an integrated management plan, and set aside some areas for exclusive St'at'imc use for traditional resource procurement, while other areas could be used for ecologically responsible revenue-generating projects such as timber harvesting, non-timber harvesting, development projects and recreation and adventure tourism operations.
- Such an approach would not work without tight regulation of use of, and access to, adjacent drainages. Detailed, strictly enforced controls on use and access in adjacent drainages would be essential.
- One specific approach would be negotiation of a replacement of all existing tenures by a single new tenure, a St'at'imc Management Area, initially co-managed with the province, but eventually transferred to St'at'imc control.
- St'at'imc people would need to be re-familiarised with their land and culture. One existing mechanism to achieve this is ecosystem-based landscape management. Significant resources would be needed from the province to investigate the

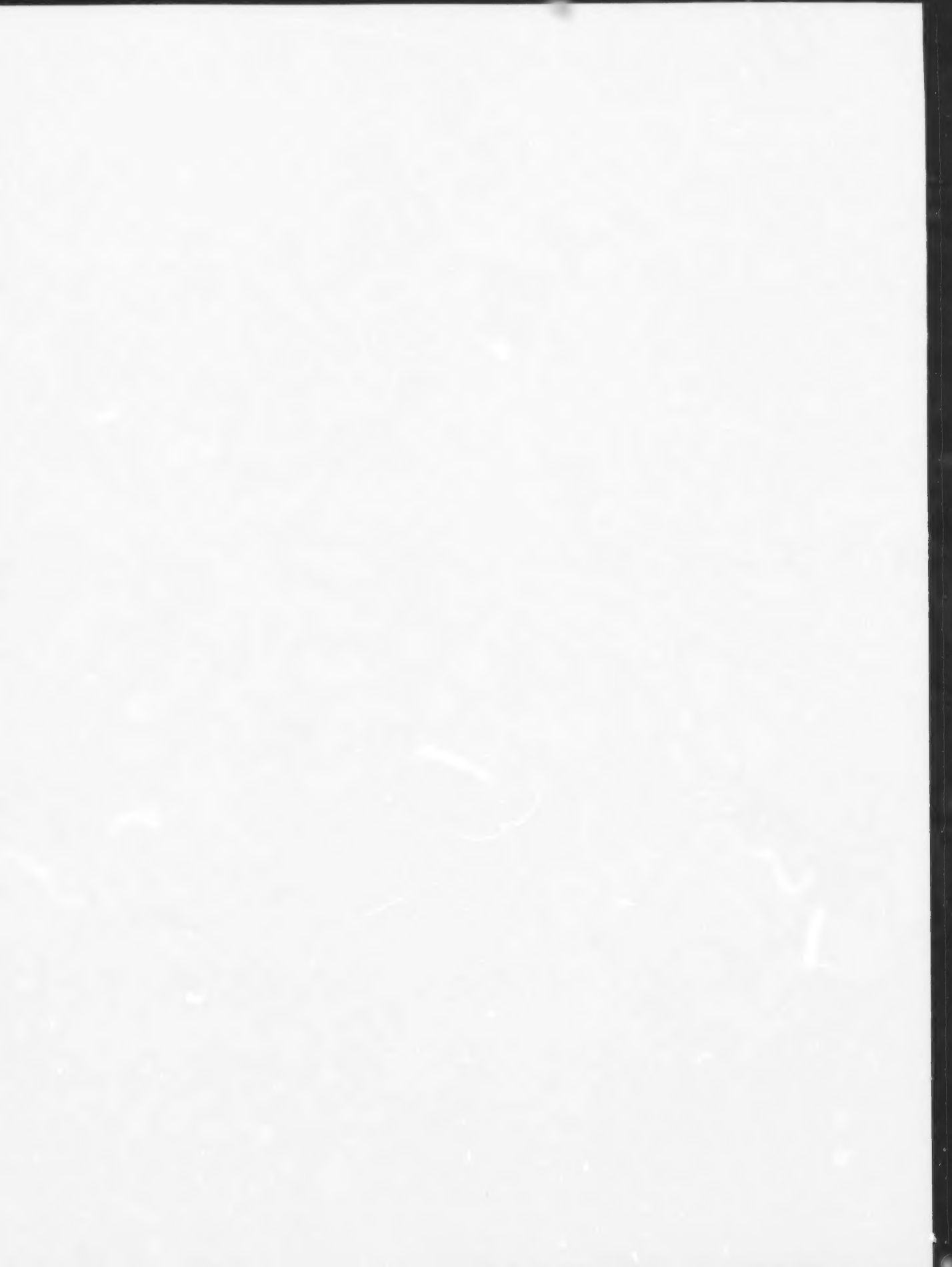
feasibility of approaches to the types of economic development opportunities suggested in the socio-economic study.

PROJECT COMMITTEE POSITION:

This proposition falls outside the mandate of the project committee in reviewing the resort proposal under the EA Act. As noted in section 6.6.1, one of the project committee's tasks has been to help to inform the assessment being made by government on implications of resort development for First Nations traditional uses such as hunting and gathering by evaluating, and documenting its findings on, project-specific information and a variety of potential project-related impacts (e.g. wildlife impacts).

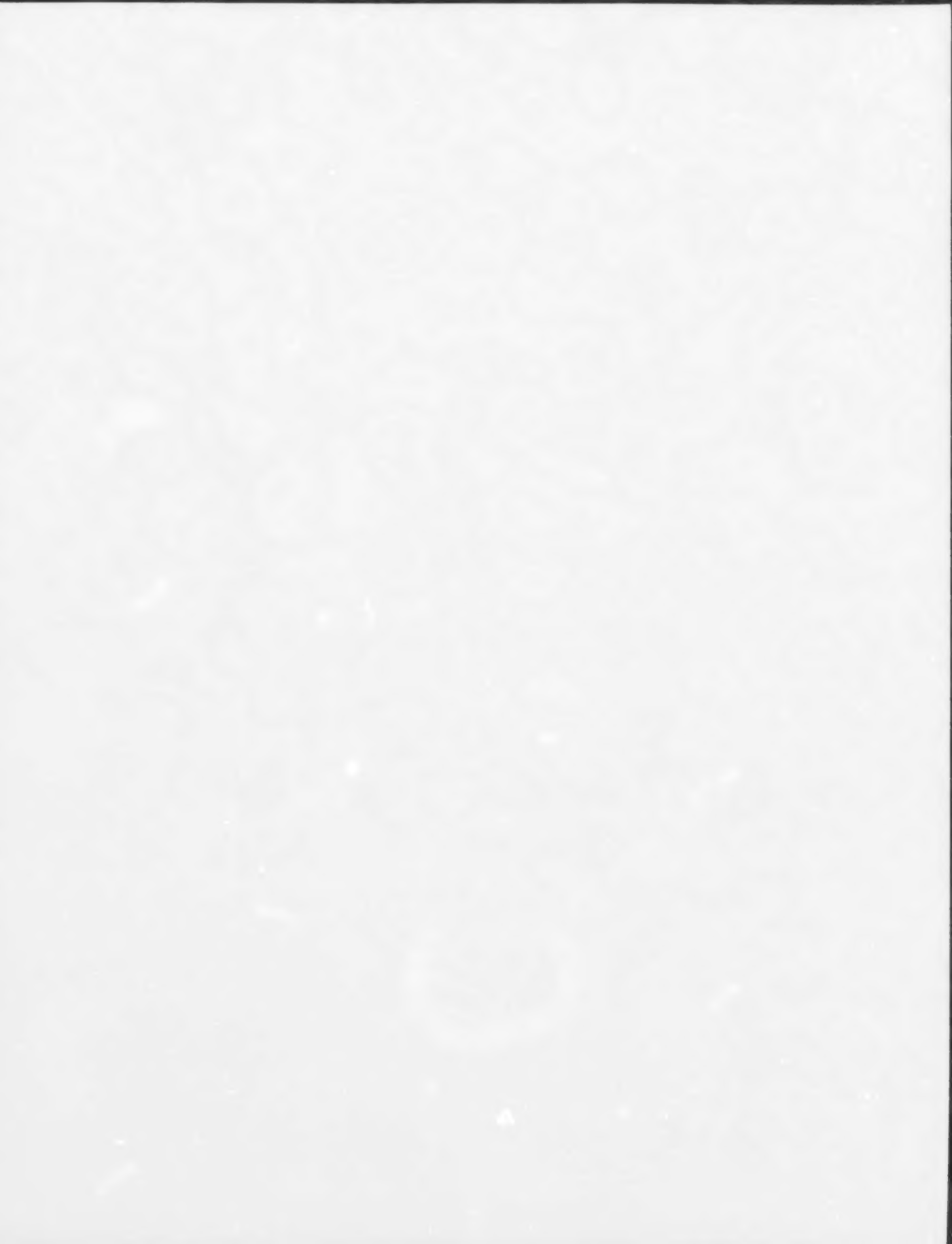
6.7.2.7 STATUS OF ISSUE AT TIME OF REFERRAL TO MINISTERS

The Lillooet LRMP process is still underway, and at the time of referral, there is no firm target date for completing the plan for submission to the provincial government.



POST-CERTIFICATE REQUIREMENTS

CHAPTER 7.0



7.0 POST-CERTIFICATION REQUIREMENTS

If the project is certified by ministers at the conclusion of the EA process, tenures and operating approvals would then be sought by NGR. These would contain detailed conditions which would refine the regulatory requirements for construction and operation of the development, building on the overall framework set by conditions in the project approval certificate. There are often also post-EA obligations of a non-permitting nature, such as environmental mitigation requirements which may not fall under any statutory permitting authority.

7.1 TRANSITION TO POST-CERTIFICATION PROCESS

Under a recent government policy initiative, if the Melvin Creek/Cayoosh project is certified, EAO will work with other key agencies to ensure that proponent, reviewer and public efforts regarding the various approval processes are more integrated and co-ordinated than in the past. Efforts will need to focus on co-ordinating information and consultation requirements following the EA review, striving to ensure that review and issuance of post-EA approvals, and other related mitigation, monitoring and compliance matters, proceed in a co-ordinated and timely manner.

As noted in section 7.2, below, the project committee has begun this task by preparing preliminary summaries of anticipated permitting requirements. Another key step is to identify a regulatory agency which is prepared to act as a one-window contact point to facilitate the timely, coordinated and integrated review of provincial statutory approvals, permits and licenses (permit reviews) required for this project, and any other relevant mitigation, monitoring or compliance matters. In this case, BCAL has the mandate to facilitate this role.

If the project is certified, EAO will organize a meeting of key agencies within a few weeks to discuss transition, and to hand responsibility for review co-ordination over to BCAL. At the meeting, a co-ordination mechanism, such as a committee process, can be discussed.

7.2 REGULATORY REQUIREMENTS

7.2.1 LAND ACT/COMMERCIAL ALPINE SKI POLICY REQUIREMENTS

A. Master Development Agreement

Permit Title: Master Development Agreement (MDA)

Statutory Reference: Land Act, RSBC 1996, c. 245

Issuing Agency: BCAL

1. Description of Permit and Information Requirements.

Ski area master plan, leading to a MDA. The ski area master plan is a description of the planned ski development, defining the location of all major elements of the ski hill and base facilities. The MDA is a contract between BCAL and a proponent which formalises their undertakings. The project plan in NGR's project report can be viewed as a conceptual ski area master plan, and needs to be developed in more detail at a more detailed scale. If the project receives a project approval certificate, it is possible that the ski area master plan could be reviewed by BCAL, agencies and the public by November 2000, with a decision on approval in March 2001.

2. Requirements for First Nations and Public Consultation (if any).

BCAL is required to implement provincial guidelines and direction dealing with First Nations interests and aboriginal rights and title. The Aboriginal Interests Assessment procedure provides a framework within which staff ensure that the province's First Nations consultation requirements are met with respect to the potential for title and the possibility of infringement of Aboriginal rights.

3. Description of EA Certificate Conditions relating to this permit

Numerous EA conditions would be broadly relevant, if an EA certificate is granted. Through the development of the ski area master plan and the MDA, BCAL's Land Act approvals play a central role the statutory authorisation of resort development. In addition to BCAL policy and technical expectations with respect to resort design, layout, operational logistics, and financial and marketing prospects, the ski area master plan and MDA must be compatible with statutory authorizations by, and policy/technical expectations of, other agencies. Thus many of the requirements of agencies such as MELP (both statutory permitting and non-statutory impact mitigation/compensation requirements), MoTH (related to the public highway and subdivision approvals), MoF (related to logging) and SLRD (related to its OCP and zoning bylaws) will be reflected in the final form of overall resort approval. If the project receives an EA certificate, BCAL will be establishing an inter-agency committee to ensure adequate co-ordination of review and permitting efforts – see section 7.1.

4. Monitoring and reporting requirements.

Under the terms of the MDA, BCAL will issue licenses, leases, rights-of-way and Crown grants as development proceeds. Each tenure is reviewed periodically, depending upon its term and type. Monitoring of activities on the ski hill would be on-

going, including inspection for completion of individual projects, audits of financial statements, and as landlord, approvals to other parties for their permitting requirements. Depending on the exact terms of the approved ski area master plan and MDA, approvals may entail bonding to secure compliance with BCAL requirements, and possibly those of other agencies.

7.2.2 WATER ACT APPROVALS

A. Water Licence

Permit Title: Section 10 - Water Licence

Statutory Reference: *Water Act*, RSBC 1996, c. 483

Issuing Agency: Water Allocation Section – MELP

1. Description of Permit and Information Requirements

A water license entitles its holder to do the following where (and in the manner) provided for in the license: (1) divert and use beneficially, and during or within the time stipulated, the quantity of water specified in the license; (2) store water; (3) construct, maintain and operate the works authorised under the license and necessary for the proper diversion, storage, carriage, distribution and use of the water or the power produced from it; (4) alter or improve a stream or channel for any purpose; and (5) construct fences, screens and fish or game guards across streams for the purpose of conserving fish or wildlife. A person who applies for a license must comply with the directions of the comptroller or the RM-Water with respect to filing the application, giving notice of it by posting, service or publication, and paying the prescribed fees, and must provide the plans, specifications and other information that the comptroller or the RM-Water requires. In this case, water licenses will be required for waterworks and storage; and industrial watering for the golf course and snowmaking. It is anticipated that licences would be issued to SLRD, which would act as the utility, and to NGR for industrial water for the golf course and snowmaking. An application for a Water License can be filed at the regional water management office or comptroller's office. The application must contain sufficient information for the RM-Water or the comptroller to adjudicate the proposal. Applications are referred to other affected agencies for their input/comments.

2. Requirement for First Nations and Public Consultation.

Consultation with First Nations is required. Other affected parties are also referred for their input/comments.

3. Description of EA Certificate Conditions relating to this Permit.

As per NGR's water supply commitments – see section 6.2.2.1 or Appendix B.

4. Monitoring and reporting requirements.

As per NGR's water supply commitments – see section 6.2.2.1 or Appendix B.

B. Short-term Use Approval

Permit Title: Section 8 Approval – Short-term use

Statutory Reference: *Water Act*, RSBC 1996, c. 483

Issuing Agency: Water Allocation Section, MELP

1. Description of Permit and Information Requirements.

An Application for Approval can be filed at the regional water management office or comptroller's office. The application must contain sufficient information for the RM-Water or the comptroller to adjudicate the proposal. Applications are referred to other affected agencies for their input/comments. If diversion or use of water is required for a term not exceeding 12 months, the comptroller or a RM-Water may, without issuing a license, grant an approval in writing, approving the diversion or use, or both, of the water on the conditions which the comptroller or regional water manager considers advisable, but the diversion or use, or both, are subject to the same provisions as if the approval were a license. This would be required for activities such as supplying a construction camp with water, which requires surface water withdrawal.

2. Requirement for First Nations and Public Consultation (if any).

Public and First Nation consultation where required. Concerns are typically low, because short-term water use is not expected to pose long-term ramifications from a First Nations perspective.

3. Description of EA Certificate Conditions relating to this Permit.

As per NGR's water supply commitments – see section 6.2.2.1 or Appendix B.

4. Monitoring and reporting requirements.

As per NGR's water supply commitments – see section 6.2.2.1 or Appendix B.

C. Change in and about a Stream

Permit Title: Section 9 Approval - Making a change in and about a stream

Statutory Reference: *Water Act*, RSBC 1996, c. 483

Issuing Agency: Engineering Section, Water Management Program, MELP

1. Description of Permit and Information.

Any proposed change to a stream channel requires an application under Section 9 of the Water Act, and can be filed at the regional water management office. A Regional Committee of MELP and DFO staff will review the proposal, and advise NGR of what additional steps/information (if any) are required. Applications are referred to other affected agencies for their input/comments. A person must not make a change in and about a stream unless that person, prior to commencing to make the change: (1) notifies a MELP regional habitat officer, and provides the information specified in the notification form (available from MELP) of the particulars of the proposed change at least 45 days prior to commencing to make the change; and (2) obtains from a habitat officer the terms and conditions described in section 42 of the Water Act Regulations (Part 7), which form the basis upon which the change can proceed.

Approval under section 9 will be required for activities such as the development of stream crossings for vehicles, culverts, rip-rap, realignment of the stream channel through the floodplain, etc.

2. Requirement for First Nations and Public Consultation.
Consultation with First Nations, where required.
3. Description of EA Certificate Conditions relating to this Permit.
As per NGR's water supply commitments – see sections 6.2.2.1 and 6.2.3.1 or Appendix B."
4. Monitoring and reporting requirements
As per NGR's water supply commitments – see section 6.2.2.1 and 6.2.3.1 or Appendix B."

7.2.3 WASTE MANAGEMENT ACT APPROVALS

A. Pesticide Use

Permit Title: Pesticide must be applied in accordance with permit or approved plan

Statutory Reference: *Pesticide Control Act*, RSBC 1996, c. 360, *Pesticide Control Regulation* (BC Reg. 319/81 O/C 1728/81)

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
Except as provided for in the regulations, a person must not apply a pesticide to a body of water or an area of land unless the person holds a permit or approved pest management plan, and applies the pesticide in accordance with the terms of the permit or approved pest management plan. When permits are required, an application must be made to the administrator. Applicators must successfully complete a test and be certified for the specific pesticide application.
2. Requirement for First Nations and Public Consultation.
Applications for permits, if required, must be posted and published in a local newspaper. Applications, with covering letter, are referred to relevant First Nations for their comment.
3. Description of EA Certificate Conditions relating to this Permit.
Commitment to follow golf course guidelines – see section 6.2.1.4.
4. Monitoring and reporting requirements.
Annual Report required for permits.

B. Sewage Discharge under MSR

Permit Title: *Municipal Sewage Regulation* (OR Liquid Waste Management Plan, see section below)

Statutory Reference: *Waste Management Act*, RSBC 1996, c. 482 and *Municipal Sewage Regulation* (B.C. Reg. 129/99 O.C. 507/99)

Issuing Agency: MELP

1. Description of Permit and Information Requirements.

A sewage discharge is exempt from section 3(2) and (3) of the Waste Management Act if the discharge is registered and complies with the regulation. This does not apply if the discharge is authorised by an operational certificate or a waste management plan approved by the minister or authorised or prohibited by an order under the Act. The discharger must register the discharge with the RM-Waste, with all information as required in section 3, design and construct the sewage facility to meet requirements of Part 4 and Schedule 1 of the MSR; and complete an environmental impact study, as specified by section 8 of Schedule 1. The discharge must meet the requirements of Parts 3 to 7 and Schedule 1. These parts of the Act require certain levels of treatment and disposal, an environmental impact assessment study, a sewage plant operating plan, etc.

2. Requirement for First Nations and Public Consultation.

None

3. Description of EA Certificate Conditions relating to this Permit.

Re: section 6.2.1.2:

- *SLRD will own, operate and maintain sewage system*
- *Advanced secondary treatment*
- *Ground disposal of treated effluent*
- *Phosphorus removal and UV disinfection, if required by impact assessment study*
- *Minimize wastewater volumes, using demand management program*
- *Gravity sewage collection*
- *Utilise rapid infiltration basins (RIBs) as preferred disposal option*
- *Utilise monitoring wells to assess soil renovation*
- *Incorporate flow equalisation, where required*
- *Investigate beneficial reuse of biosolids*
- *Utilise existing old logging road for pipeline, where it departs from access road*
- *Ensure that identification of gravel pits does not interfere with the selection of ground disposal area*

4. Monitoring and reporting requirements.

As specified by Part 7 Monitoring of MSR, or as directed by the RM-Waste.

C. Municipal Liquid Waste under Liquid Waste Management Plan

Permit Title: Liquid Waste Management Plan (OR *Municipal Sewage Regulation*, see section above)

Statutory Reference: *Waste Management Act*, RSBC 1996, c. 482, section 18 Waste Management Plans, Section 20 Public Consultation Process and Sections 21, 22 and 23

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
A municipality may submit for approval by the MELP minister a waste management plan respecting the management of municipal liquid waste. A manager may issue an operational certificate under the plan, including conditions.
2. Requirement for First Nations and Public Consultation.
Section 20 (Public Consultation Process) of the WMA specifies a comprehensive review and consultation process with the public, respecting all aspects of the development, amendment and final content of a waste management plan. The minister must approve the public review and consultation process.
3. Description of EA Certificate Conditions relating to this Permit.
Re: section 6.2.1.2:
 - *SLRD will own, operate and maintain sewage system*
 - *advanced secondary treatment*
 - *Ground disposal of treated effluent*
 - *Phosphorus removal and UV disinfection, if required by impact assessment study*
 - *Minimize wastewater volumes, using demand management program*
 - *Gravity sewage collection*
 - *Utilise RIBs as preferred disposal option*
 - *Utilise monitoring wells to assess soil renovation*
 - *Incorporate flow equalisation, where required*
 - *Investigate beneficial reuse of biosolids*
 - *Utilise existing old logging road for pipeline, where it departs from access road*
 - *Ensure that identification of gravel pits does not interfere with the selection of ground disposal area*
4. Monitoring and reporting requirements.
Monitoring requirements would be included in the plan.

D. Air Discharge

Permit Title: Air Discharge Permit

Statutory Reference: *Waste Management Act*, RSBC 1996, c. 482, Section 3

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
A person may not introduce a waste into the environment or cause pollution without a permit, approval, order or regulation. The only emission identified to date which

would require an air emissions permit would be the natural gas electricity generation power plant. If a small camp incinerator is used, it would need to meet the Conditional Exemption Regulation 201/94, 2(3)(b). Any asphalt plants would need to be permitted to discharge air emissions. The owners of the plant would normally hold the permit. Any open burning must comply with the Open Burning Smoke Control Regulation, Forest Practises Code of British Columbia Act and the Open Burning Smoke Control Code of Practice. An application for a permit must be submitted for approval by the RM-Waste.

2. Requirement for First Nations and Public Consultation.
Air discharge applications are referred to local First Nations and agencies, posted on-site and published in local newspapers and the BC Gazette, except that small camp incinerators are exempt.
3. Description of EA Certificate Conditions relating to this Permit.
No wood-burning appliances, except one wood-burning fireplace in lobby of hotels with greater than 100 units. Fuel for the power plant will be LNG, with diesel as an emergency backup only. Heat recovery at the power plant would be used to heat nearby buildings, pools, etc.
4. Monitoring and reporting requirements.
Monitoring of the plant emissions and ambient air quality and related reporting would be requirements of the permit.

E. Special Waste Storage

Permit Title: Special Waste Storage Facility

Statutory Reference: Waste Management Act, RSBC 1996, c. 482, Part 2 and Special Waste Regulation (BC REG 63/88) and Transportation of Dangerous Goods Act

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
Under WMA, Section 8, a person must not store more than a prescribed amount of special waste, unless authorised by an approval, order or permit. Transportation of special wastes is controlled by the Transportation of Dangerous Goods Act and section 9 of WMA. A special waste storage facility, if required, would need permit approved by RM-Waste. [Note: Storage of flammable liquids requires approval of the Fire Commissioner.]
2. Requirement for First Nations and Public Consultation.
Special Waste Storage applications are referred to local First Nations and agencies, posted on-site, and published in local newspapers and the BC Gazette.
3. Description of EA Certificate Conditions relating to this Permit.
NGR has committed to developing an overall spill and special waste management plan, co-ordinated by the onsite environmental monitor.

4. Monitoring and reporting requirements.
As required by the permit, Special Waste Regulation and Spill Reporting Regulation 263/90.

F. Spill Plan

Permit Title: Approval of Spill Plan

Statutory Reference: *Waste Management Act*, RSBC 1996, c. 482, Section 12 and 12.1 and *Spill Report Regulation* (BC Reg. 263/90)

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
The Minister, by order, may require a person having possession, charge or control of any polluting substance, to prepare a spill contingency plan. The plan should comply with the Spill Reporting Regulation and Transportation of Dangerous Goods Act (Federal).
2. Requirement for First Nations and Public Consultation.
None.
3. Description of EA Certificate Conditions relating to this Permit.
Develop detailed plan to address special wastes, hazardous materials and emergency preparedness. Ensure that plans are in compliance with CCME Code of Practice of Underground and Above Ground Storage Tank Systems containing Petroleum and Allied Petroleum Products, CAN/CAS-Z731-M91 Emergency Planning for Industry, the Spill Reporting Regulation and MELP's Guidelines for Industry Emergency Response Contingency Plans.
4. Monitoring and reporting requirements.
Plan should be tested on an annual basis.

G. Construction Camp Sewer System

Permit Title: Approval for Construction Camp Sewer System

Statutory Reference: *Waste Management Act*, RSBC 1996, c. 482, and *Municipal Sewage Regulation*

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
A construction camp sewer system must comply with the MSR if sewage discharge will exceed 22.7 m³/d. If under 22.7 m³/d, then it must comply with the Health Sewage Regulation. The discharger must register the discharge, including all information, as required.
2. Requirement for First Nations and Public Consultation.
None

3. Description of EA Certificate Conditions relating to this Permit.
None for separate construction camp sewage discharges, but every effort should be made to connect to permanent sewage system, once available.
4. Monitoring and reporting requirements.
As specified by Part 7 Monitoring or as directed by the RM-Waste.

7.2.4 WILDLIFE ACT APPROVALS

A. Goat Capture

Permit Title: Capture of Wildlife for Goat Monitoring Study

Statutory Reference: *Wildlife Act Permit Regulations* (BC Reg. 337/82)

Issuing Agency: MELP

1. Description of Permit and Information Requirements.
A regional manager, by issuing a permit with whatever conditions, may authorise a person to hunt, trap or kill wildlife during the open or closed season for scientific purposes. For the proposed resort, this may be required for construction activities (e.g. if fish removal is required or for capturing of goats for radio-telemetry studies).
2. Requirement for First Nations and Public Consultation (if any).
No consultation required for wildlife monitoring activities.
3. Description of EA Certificate Conditions relating to this Permit.
As per NGR's commitments – see section 6.2.3.2.2 or Appendix B.
4. Monitoring and reporting requirements.
Details to be determined, with aid of third-party consultants.

7.2.5 FOREST ACT APPROVALS

A. Licence to Cut

Permit Title: Licence to Cut

Statutory Reference: *Forest Act*, RSBC 1996, c. 157, and *Forest Practices Code of BC Act*, RSBC 1996, c. 159

Issuing Agency: MoF District Manager

1. Description of Permit and Information Requirements.
A Licence to Cut (LTC) is required prior to any tree cutting by NGR, and an application would be accepted only when NGR has authority to occupy the land, based upon another land tenure, such as, in this case, tenures granted under the Lands Act. The LTC is issued under authority of the Forest Act.

2. Requirement for First Nations and Public Consultation (if any).
The requirements for First Nations consultation and public review would be the responsibility of the land-tenure-granting authority (e.g. BCAL). The District Manager must be satisfied that First Nations consultation has taken place prior to issuing a LtC.
3. Description of EA Certificate Conditions relating to this Permit.
None specific to the LtC.
4. Monitoring and reporting requirements
MoF has no special monitoring or reporting requirements of NGR with respect to land clearing under LtC. All monitoring and reporting is done through normal processes for cutting permits and road permits.

7.2.6 HEALTH ACT APPROVALS

A. Waterworks Construction

Permit Title: Waterworks Construction Permit

Statutory Reference: *Safe Drinking Water Regulation* (B.C. Reg. 230/92)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements.
A permit is required to construct or modify waterworks system. A waterworks system is defined as a system distributing potable water to two or more connections. There must be an approved source of water, and the design of works must comply with existing standards and guidelines.
2. Requirement for First Nations and Public Consultation (if any).
None.
3. Description of EA Certificate Conditions relating to this Permit.
Project-specific. For this project, none – was not an EA-level issue.
4. Monitoring and reporting requirements.
Notification of Health Authority upon completion of work. Operating permit (see below) required before use.

B. Waterworks Operation

Permit Title: Waterworks Operating Permit)

Statutory Reference: *Safe Drinking Water Regulation* (B.C. Reg. 230/92)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements.
A permit is required to operate a waterworks system. A waterworks system is defined as a system distributing potable water to two or more connections.

Construction must be in accordance with construction permit, an emergency response plan is required, and a trained and certified operator may be required.

2. Requirement for First Nations and Public Consultation (if any).
None.
3. Description of EA Certificate Conditions relating to this Permit.
Project specific. For this project, none – was not an EA-level issue.
4. Monitoring and reporting requirements.
Record analyses and tests for water potability, disinfection, and treatment residuals.

C. Swimming Pool Construction

Permit Title: Certificate of Authorisation for Swimming Pools, etc.

Statutory Reference: *Swimming Pool, Spray Pool and Wading Pool Regulations* (B.C. Reg. 289/72)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements.
A permit is required for construction of a pool. Plans and specifications must be prepared and submitted by a professional engineer or architect registered to practice in BC.
2. Requirement for First Nations and Public Consultation (if any).
None.
3. Description of EA Certificate Conditions relating to this permit.
Project specific. For this project, none – was not an EA-level issue.
4. Monitoring and Reporting Requirements.
Notification of Health Authority upon completion of work through a letter of certification. Operating permit required before use, see below.

D. Swimming Pool Operation

Permit Title: Operating Permit for Swimming Pools, etc.

Statutory Reference: *Swimming Pool, Spray Pool and Wading Pool Regulations* (B.C. Reg. 289/72)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements.
A permit is required for operation of a pool. Construction must be in accordance with approved plans and the Regulations.
2. Requirement for First Nations and Public Consultation (if any).
None.

3. Description of EA Certificate Conditions relating to this permit.
Project-specific. For this project, none – was not an EA-level issue.
4. Monitoring and Reporting Requirements.
Record maximum bathing loads, attendance, amount and types of chemicals added, results of tests for residual disinfectants and pH, and any other records required by the Health Authority. Report accidents and injuries, per the Regulation.

E. Sewage Disposal System Construction

Permit Title: Permit to construct a sewage disposal system

Statutory Reference: *Sewage Disposal Regulation* (B.C. Reg. 411/85)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements
A permit is required for installation and use of a sewage disposal system of less than 5000 gallons (22.7 cubic metres) per day. Soil must be appropriate for disposal, and the design must meet the requirements set out in the Regulation.
2. Requirement for First Nations and Public Consultation (if any).
Posting requirement, possible publication requirement.
3. Description of EA Certificate Conditions relating to this permit.
Project specific. For this project, none – was not an EA-level issue.
4. Monitoring and Reporting Requirements.
Written authorisation required to use system before use commences (see below).

F. Sewage Disposal System Operation

Permit Title: Authorisation to operate a sewage disposal system

Statutory Reference: *Sewage Disposal Regulation* (B.C. Reg. 411/85)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements.
After a permitted sewage disposal system has been constructed, it may not be used until its use has been authorised in writing. Construction must comply with the Regulation and permit conditions.
2. Requirement for First Nations and Public Consultation (if any).
None.
3. Description of EA Certificate Conditions relating to this Permit.
Project specific. For this project, none – was not an EA-level issue.
4. Monitoring and reporting requirements.
None.

G. Health Regulation of Construction Camps

Permit Title: no formal permit, not applicable unless construction camp proves necessary.

Statutory Reference: *Industrial Camps Health Regulation* (B.C. Reg. 427/83)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and Information Requirements.
The Medical Health Officer or his designate may direct the camp operator to remedy any health deficiency in existence at the camp, or, in some cases, close the camp. This authority is exercised in lieu of formal permitting procedures. Note that other permits, such as for food premises, may also be required.
2. Requirement for First Nations and Public Consultation (if any).
None.
3. Description of EA Certificate Conditions relating to this permit.
Project-specific. For this project, none – was not an EA-level issue.
4. Monitoring and Reporting Requirements.
Immediately report to the Medical Health Officer any outbreak of disease.

H. Food Premises Construction

Permit Title: Approval of plans for construction or alteration of food premises

Statutory Reference: *Food Premises Regulation* (B.C. Reg. 210/99)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit
Plans and specifications for premises must be approved before construction or alteration. Construction or alteration must comply with plans and the Regulation.
2. Requirements for First Nations and Public Consultation.
None.
3. Description of EA Certificate Conditions relating to this permit.
Project-specific. For this project, none – was not an EA-level issue.
4. Monitoring and Reporting Requirements
Submit plans to regional Health Authority. Operating permit required before facility allowed to operate (see below).

I. Food Premises Operation

Permit Title: Permit to operate a food service establishment

Statutory Reference: *Food Premises Regulation* (B.C. Reg. 210/99)

Issuing Agency: C/EHO, Thompson Health Region, MoH

1. Description of Permit and information requirements.
A permit is required to operate a food service facility or restaurant. Operation must comply with requirements of the Regulation and the local Health Authority.
2. Requirements for First Nations and Public Consultation (if any).
None.
3. Description of EA Certificate Conditions relating to this permit
Project-specific. For this project, none – was not an EA-level issue.
4. Monitoring and Reporting Requirements
Immediately notify a health official of any circumstance in the food premises that may cause a health hazard. Monitor safe food handling practices, employee hygiene, etc. as specified in the Regulation. Required to have written procedures to ensure the safe and sanitary operation of the establishment.

J. Other Requirements

Legislation requires that the Medical Health Officer be informed in the event of a toxic spill, or in the event of any other threat to public health (such as food poisoning or widespread sickness at the resort).

7.2.7 HERITAGE CONSERVATION ACT APPROVALS
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A. Archaeological Investigations

Permit Title: Heritage Inspection Permit; Heritage Investigation Permit ; and Alteration Permit

Statutory Reference: *Heritage Conservation Act*, R.S.B.C. 1996 C.187.

Issuing Agency: Archaeology Branch, SBTC

1. Description of Permit and Information Requirements.
The Heritage Conservation Act (HCA) provides for the protection of archaeological sites located on either provincial Crown or private land, through designation as "Provincial Heritage Sites" (section 9), or through automatic protection by virtue of being of particular historic or archaeological value (section 13). Protected archaeological sites may not be altered in any manner without a permit issued under the authority of the HCA by the MSBTC Minister or designate.

If further archaeological studies are undertaken by NGR (e.g. working with St'at'imc Bands), a HCA section 14 permit will be required. Heritage Inspection and Heritage

Investigation Permits issued under section 14 provide the authority to search for and collect data from archaeological sites for impact assessment and data recovery purposes. Alteration Permits issued under section 12 follow from Inspection and Investigation Permits, and allow alteration of archaeological sites during development activities. The Archaeology Branch issues Alteration Permits subsequent to completion and acceptance of impact assessment and management studies.

2. Requirement for First Nations and Public Consultation (if any).
Applications for permits are referred by the Archaeology Branch to First Nations which are asserting traditional interest in the proposed study area, with a request for comment on the study methodology. First Nations are usually given 15-30 days to respond in writing.
3. Description of EA Certificate Conditions relating to this Permit.
No outstanding permitting issues have been identified. MSBTC does not require further investigations at this time, but understands that NGR may wish to undertake co-operative investigations with St'at'imc Bands.
4. Monitoring and reporting requirements.
NGR must comply with the following during project development. If archaeological material is inadvertently encountered during construction, all land-altering activities in the vicinity of the project site must be suspended immediately and the Archaeology Branch, MSBTC, must be contacted. The need for remedial archaeological work will require an HCA section 14 Permit. A section 12 Alteration Permit would follow subsequent to completion and acceptance of any impact assessment and management studies required by the Archaeology Branch.

7.2.8 HIGHWAY ACT APPROVALS

A. Highway Access

Permit Title: Highway Access Permit

Statutory Reference: Section 54(1) of the *Highway Act*, RSBC 1996, c. 188

Issuing Agency: MoTH, designated official – Lillooet

1. Description of Permit and Information Requirements.
This permit requirement is a possibility for connecting the resort's new access road to a controlled access highway. If the new resort access road were to be a public road, constructed and maintained by the province/MoTH, no permit would be required. The only concern relates to sight distance (traffic safety) improvements to Highway #99 at the Highway #99/resort access road intersection location. This has been addressed by NGR, and included in the road upgrade cost. For private roadway developments, a highway access permit is required, together with engineering drawings at a scale of 1:1000 or better, with roadway cross-sections and

profiles for the proposed roadway development, and showing how it will connect to MoTH roads (i.e. Highway #99). In rare cases, MoTH might close off any access which does not meet the permit conditions. Closure is usually associated with traffic safety issues.

2. Requirement for First Nations and Public Consultation (if any).
None planned at this time.
3. Description of EA Certificate Conditions relating to this Permit.
As per NGR's road location/design commitments – see section 6.1.2.1 or Appendix B.
4. Monitoring and reporting requirements.
A follow-up field inspection is conducted after any road access is tied into the highway, to make sure conditions of the permit have been addressed.

B. Works in a Public Highway

Permit Title: Works within the right-of-way

Statutory Reference: Section 14 of the Highway Act, RSBC 1996, c. 188

Issuing Agency: MoTH, designated official (usually District Development Approvals Technician or District Highways Manager)

1. Description of Permit and Information Requirements.
These permits are required for any works within public roadway rights-of-way, and would be needed for installation of utilities associated with the resort within either the Highway #99 right-of-way or the resort's new access road (if it were a public road). Normally, co-ordination with utility companies and other services should be arranged during the detailed roadway design process for the access road. Examples of activities which require permits include water and sewer lines or hydro lines crossing the access road constructed grade. The information required includes engineering drawings at a scale of 1:1000 or better from the applicant for said works. The applicant may or may not be the proponent if utilities constructed within the right-of-way are not driven by the resort development directly (e.g. if BC Hydro underground utilities were to meet area-wide needs rather than resort needs directly). No special issues have been identified at this time. There will be a need to monitor work to ensure that it meets the conditions of permits. If there is non-compliance, the applicant is asked to meet the conditions of the work prior to sign-off. In extreme conditions (e.g. highway closures as a result of utility works), emergency work could be done by MoTH, with cost recovery from the applicant.
2. Requirement for First Nations and Public Consultation (if any).
None planned at this time.

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3. Description of EA Certificate Conditions relating to this Permit.
Works within rights-of-way are usually not considered until detailed design or construction activities occur. This would occur after an EA certificate is issued, since these are not normally EA-level issues.
4. Monitoring and reporting requirements.
There is a follow-up field inspection after permit issuance, to ensure that conditions of the permit have been addressed. Normally the applicant contacts the permit issuer when work has been completed for inspection or a MoTH representative may be on-site when work adjacent to the highway is underway.

C. Building Encroachment on to Highways

Permit Title: Encroachment Permits and Setback Distances for Buildings

Statutory Reference: Section 4.01 of B.C. Regulation 174/70 of the *Highway Act*

Issuing Agency: MoTH, designated official (usually District Development Approvals Technician or District Highways Manager)

1. Description of Permit and Information Requirements.
Permits are required if buildings encroach into roadway rights-of-way, applying to setback distances for buildings from the edges of public roadway rights-of-way and to encroachment into public roadway rights-of-way. These permits are normally anticipated and planned for in the layout plan for any development. No special issues are anticipated at this time. There will be a need to monitor work to ensure that it meets the condition of the permit.
2. Requirement for First Nations and Public Consultation (if any).
None planned at this time. Normally the resort development plan will define building encroachment issues in relationship to rights-of-way, and the public review of the plan would provide adequate consultation opportunities. The detailed permit requirements would be an outcome of the resort plan.
3. Description of EA Certificate Conditions relating to this Permit.
None – such issues are not normally EA-level issues.
4. Monitoring and reporting requirements.
There is follow-up after permit issuance to ensure that conditions of the permit have been addressed. Monitoring may include field inspection and/or contact with other agencies (e.g. BCAL).

7.2.9 LAND TITLE ACT/STRATA PROPERTY ACT APPROVALS

A. Subdivision Approvals

Permit Title: Subdivision Approvals

Statutory Reference: Section 83 of the *Land Title Act*, RSBC 1996, c. 250 (fee simple approvals) and/or section 10 of the *Strata Property Act*, RSBC 1996, c. 43 (formerly *Condominium Act for Strata Subdivisions*)

Issuing Agency: MoTH, Provincial Approving Officer

1. Description of Approval and Information Requirements.
These approvals define the property status of the development and individual lots. Approvals would not normally be considered until the resort plan is developed in enough detail to define property limits and general structure locations for the village development. The type of approval issued depends on the type of development. Referrals to other agencies will be required if MoTH is involved in the subdivision approval process. This would normally occur in unincorporated areas.
2. Requirement for First Nations and Public Consultation (if any).
None planned at this time. Normally the resort development plan will define the proposed land tenures, and public review of the overall plan would provide for adequate consultation. The detailed approval requirements would be an outcome of the resort plan.
3. Description of EA Certificate Conditions relating to this Permit.
None specific to lot layout and subdivision approval, although related conditions, covering various aspects of village development are listed in Appendix B.
4. Monitoring and reporting requirements.
There is follow-up prior to plan approval to make sure conditions of the preliminary approval have been addressed. Monitoring may include field inspection and/or contact with other agencies (e.g. BCAL) prior to final approval. Once registered, the plan is final.

7.2.10 MINES ACT APPROVALS

Permit Title: Sand and Gravel Permit Approving Work System and Reclamation Program

Statutory Reference: *Mines Act*, R.S.B.C. 1996, c. 293

Issuing Agency: MEM

1. Description of Permit and Information Requirements.
If NGR receives a Land Act tenure for the project, any gravel or rock excavated on the property for the exclusive use of the owners is exempted by policy from the permit requirements of the Mines Act. A permit would be required in the event that

NGR were to open and operate a commercial gravel pit, either on or off the project site, for the sale of aggregate on the open market. In this case, it is not clear that such permits will be required.

2. Requirement for First Nations and Public Consultation (if any).
None identified.
3. Description of EA Certificate Conditions relating to this Permit.
None at this time – not clear that such permits will be required.
4. Monitoring and reporting requirements.
None identified – not clear that such permits will be required.

7.2.11 UTILITIES COMMISSION ACT APPROVALS

A. Water Utility

Permit Title: Certificate of Public Convenience and Necessity

Statutory Reference: Order #G-133-99, under the *Utilities Commission Act*, R.S.B.C. 1996, c. 473

Issuing Agency: BCUC

1. Description of Permit and Information Requirements.
A Certificate of Public Convenience and Necessity (CPCN) is required by a party which will be supplying a public utility. An application is to include information on the applicant, a project description, project justification, a description of any public consultation undertaken, and any other information as required by the BCUC.
2. Requirement for First Nations and Public Consultation (if any).
The proponent is encouraged to initiate discussions with appropriate government agencies and the public, including any affected First Nations groups, very early in the project planning stage, in order to obtain an appreciation of the issues to be addressed prior to filing the application.
3. Description of EA Certificate Conditions relating to this Permit.
None at this time – did not raise EA-level issues.
4. Monitoring and reporting requirements.
None identified – not clear that such permits will be required.

7.2.12 NAVIGABLE WATERS PROTECTION ACT APPROVALS

A. Bridge Crossing

Permit Title: Approval

Statutory Reference: *Navigable Waters Protection Act*, c. N-22, section 5(1)

Issuing Agency: Navigable Waters Protection Division, CCG/DFO

1. Description of Permit and Information Requirements.
Formal approval is required from CCG for a bridge constructed over a navigable waterway. CCG will require three drawings, one overall site map showing bridge location, one showing bridge in plan view with all dimensions, and one showing a section view of the bridge and river, including vertical clearances from high water. Standard CCG conditions of approval include, but are not limited to, adequate vertical clearance above high water for the type of craft capable of navigating the waterway, clear-span design, and access for inspection purposes.
2. Requirement for First Nations and Public Consultation (if any).
NWPA sec. 5(1) is a law list trigger for CEAA. Section 5(1) approval also requires the proponent to deposit plans in a land titles office and to advertise in the Canada Gazette and two local papers. There is a 30-day public response period, and a requirement to refer to potentially affected First Nations to fulfil obligations under CEAA.
3. Description of EA Certificate Conditions relating to this Permit.
NWPA conditions of approval will address navigational concerns only – see section 6.2.3.1. The CEAA screening will address federal environmental concerns – see sections 6.2.1.6, 6.2.3.1, 6.2.3.2.3 and 6.2.4.
4. Monitoring and reporting requirements.
CCG will have no monitoring requirements. However, there may be monitoring requirements from other federal departments in the CEAA screening document.

7.2.13 LOCAL GOVERNMENT APPROVALS

A. Official Community Plan Bylaw

The proposed ski resort would be located on Crown land within the SLRD's jurisdiction. Regional Districts may pass bylaws for Official Community Plans (OCPs), Rural Land Use or Zoning. The adoption of an OCP does not require a local government to also pass a zoning bylaw for the area. A Rural Land Use Bylaw is a two-part document, with the first part being similar to an OCP, and the second part being similar to a zoning bylaw. A zoning bylaw can be passed without an OCP being in effect for the area. SLRD has the discretion to determine whether it will use an OCP and/or zoning bylaw for land use control of the project area.

The Duffey Lake Corridor Official Community Plan Adoption Bylaw No. 479, 1992 (DLOCP) states the local government's land use intent for the area adjacent to Highway #99. This OCP, however, affects only a very small portion of the project area, specifically, the land immediately adjacent to Highway #99. The majority of the proposed resort would not be located within the current OCP.

If SLRD proceeds with an OCP for the proposed resort, it is possible that the OCP would be an amendment to the DLOCP, rather than a 'stand alone' OCP. SLRD bylaw No. 479, 1992 established the OCP for the Duffey Lake Corridor portion of Electoral Areas B and C of the SLRD. Section 2.6 Resort (R) of the DLOCP provides an explanation of the resort provisions, and the land uses that are permitted in this designation. In section 3. Policies, 3.1.5, there is specific mention of the proposed Melvin Creek/Cayoosh ski resort. Further mention is found in section 3.6.2, where the SLRD "...endorses the Crown Lands review process for the Melvin Creek Study Area..."

The creation of an OCP or an OCP amendment are matters under SLRD jurisdiction, but would involve comment from provincial agencies. MMA would become involved if there were issues of provincial interest that needed to be resolved.

The new or amended OCP would also need to incorporate public comment, including a public hearing. Following the public hearing, the MMA Minister would be required to approve the OCP bylaw before the SLRD board would be able to adopt it as a new or amended OCP.

The SLRD, in its OCP, could designate the ski resort as a development permit area pursuant to the MA, section 879, or as development approval information areas or circumstances, per MA, section 879.1. If it does establish either of these, it must describe the special conditions or objectives that justify the specification or designation. To designate the resort as a development permit area, the SLRD would also have to specify guidelines respecting the manner by which the special conditions or objectives would be addressed. The requirements of Division 9 also apply if MA, section 879 or section 879.1 provisions are incorporated into the OCP.

B. Zoning Bylaw

The site of the proposed resort is presently zoned Rural 1 (RR1) under SLRD Zoning Bylaw No. 72, 1975. A new base zoning bylaw, SLRD Zoning Bylaw No. 670, 1999, is in preparation for Electoral Areas A and B, and will affect the proposed resort. The zoning under the new bylaw will be Rural 2 (RR2). Both the existing RR1 zone and the proposed RR2 zone establish an 8-ha minimum parcel area for subdivision. Permitted uses include agriculture, forestry, open land recreation (which specifically does not include mechanised ski lift facilities), single family dwelling, garden nurseries, kennels and campgrounds. A comprehensive rezoning amendment will therefore be required to accommodate development of the resort.

C. Subdivision Servicing Bylaw

The SLRD does not presently have a subdivision servicing bylaw pursuant to section 938 of the MA to regulate and require the provision of works and services. A new subdivision bylaw will need to be adopted for the resort area, and all relevant works and services will be required to conform to the standards established in the bylaw.

D. Building Permits

Buildings and structures will require building permits from the SLRD, pursuant to Building Bylaw No. 572, 1995.

E. Solid Waste Management Plan

An operational certificate under the SLRD's Solid Waste Management Plan will be required for solid waste management practices in conjunction with the resort.



RECOMMENDATIONS AND REASONS

CHAPTER 8.0

8.0 RECOMMENDATIONS AND REASONS

8.1 REVIEW STATUS

Pursuant to section 29(4) of the *Environmental Assessment Act* (Act), the Melvin Creek/Cayoosh project committee, established in December 1996 for the review of the proposed Melvin Creek/Cayoosh mountain resort project, has completed its review of the application, project report, and various other supplementary documentation submitted by the proponent, NGR Resort Consultants Inc. (NGR) – see Appendix A for a listing of significant submissions - and also the results of information distribution and consultation activities undertaken with the public and First Nations. The project committee hereby provides its recommendations, and the reasons for those recommendations, to the Executive Director of the EAO, for conveyance to the Minister of Environment, Lands and Parks and the Minister of Employment and Investment (the responsible minister within the meaning of the *EA Act*).

8.2 RECOMMENDATIONS

Pursuant to section 29(4) of the *EA Act*, the Melvin Creek/Cayoosh project committee recommends that the Melvin Creek/Cayoosh project application be referred to the Minister of Environment, Lands and Parks and the Minister of Employment and Investment for a decision to issue a project approval certificate, subject to conditions, in accordance with section 30(1)(b)(i) of the *EA Act*.

The project committee further recommends the following:

- The project approval certificate should be issued subject to NGR fulfilling its commitments, as presented in its various submissions – see Appendix A for listing – and as itemised in Appendix B to this report.
- The most recent version of each of NGR's commitments, as documented in its application, project report and various other supplementary documentation submitted by it during the EA review of the project – see Appendix A – and as itemised in Appendix B, should form an integral part of the project approval certificate.
- NGR must cause the project to be designed, located, constructed and operated in accordance with its submissions, as listed in Appendix A, and with its commitments, as itemised in Appendix B.
- If, prior to commencing the first commercial operation of a lift constructed at the resort, NGR intends to modify the design, location, construction or operation of the resort or any resort component or activity, as proposed in Appendices A and B to this report, NGR must make application to the relevant regulatory authorities, which will implement the appropriate approval processes under the statutes which they administer. If the variation will (or may) have a significant adverse environmental, economic, social, cultural, heritage or health effect, NGR must provide notice of the intended variation to the Executive Director of the EAO who, after consultations and

discussions with appropriate agencies, will make recommendations regarding the appropriate review process.

8.3 REASONS

The project committee recommends that ministers grant a project approval certificate to NGR for the project, subject to conditions, for the reasons which are noted below.

Referral under Section 29 of the EA Act

Pursuant to section 29(4) of the *EA Act*, the project committee recommends that ministers grant a project approval certificate to NGR for the project, subject to conditions, because the committee is satisfied that:

- pursuant to section 29(3) of the *EA Act*, specified further measures related to the distribution of information about the project, established under section 14 of the *EA Act* – see section 4.1.1 for the project committee's expectations - have been carried out by NGR;
- all major policy and technical issues have been identified during the EA review of the project;
- NGR's application, project report and various other documentation submitted by it during the EA review of the project (see listing in Appendix A), supplemented in some cases by analysis solicited by the project committee from other parties, identify and adequately describe the potential effects of the project, including all significant potential adverse effects;
- NGR's application, project report and various other documentation submitted by it during the EA review of the project (see listing in Appendix A), supplemented in some cases by analysis solicited by the project committee from other parties, set out practical means of preventing or reducing to an acceptable level all significant adverse effects of the project;
- concerns raised during the EA review of the project which NGR is responsible for resolving have been adequately addressed in NGR's submissions and/or will be adequately addressed by fulfilment of NGR's commitments;
- all potential adverse effects of the project are considered to be sufficiently manageable that they can be reduced to acceptable levels with the implementation of the mitigation and compensation strategies, proponent commitments and complementary government actions referenced in this report, including compliance with the requirements set out in the statutory permits, licences, approvals and other regulatory authorisations which will be required for the lawful construction and operation of the project;
- the construction and operation of the project, based on the successful implementation of, and full compliance with, management, mitigation and compensation strategies, is not expected to cause significant adverse environmental, economic, social, cultural, heritage and health effects; and
- NGR has volunteered many impact management commitments, and has confirmed its acceptance of all other commitments which have been required of it by the project committee.

Purposes of the EA Act

The project committee is satisfied that the EA review of this project has been conducted in a manner consistent with achieving the purposes of the *EA Act*, and in particular, that:

- the project can be implemented in a manner which promotes sustainability by providing for adequate environmental protection while fostering a sound economy and social well-being in the local region of development;
- the EA review has provided for the assessment of the key environmental, economic, social, cultural, heritage and health effects of the project in a thorough and integrated manner (see section 6.0 – *Consideration of Potential Effects of Project* - for a summary account of these assessments), albeit the review has not been as timely as anticipated by the *Time Limits Regulation* at all review steps (see section 3.4 for details of the timeline extensions required in completing this review);
- adequate measures are proposed to prevent or mitigate potential adverse effects – again, see section 6.0 – *Consideration of Potential Effects of Project* – and also NGR's commitments – see Appendix B);
- the EA review process has been open, accountable and neutrally administered – see section 4.0 – *Information Distribution and Consultation* – for details; and
- the EA process has provided opportunities for the meaningful participation of the public, the proponent, First Nations, and local, provincial and federal government agencies in the review of this project – see both section 3.0 (*Review Process for Proposed Melvin Creek/Cayoosh Mountain Resort Project*) and section 4.0 (*Information Distribution and Consultation*).

Promoting Sustainability

Achieving sustainability in development undertakings requires that government make balanced decisions which are economically, socially and environmentally sustainable, in that they:

- are compatible with the need to maintain the integrity of the natural environment, including fish and wildlife populations and habitats (biodiversity), the quality of soil, water and air, and special natural features - through management regimes designed to achieve protection and conservation, as well as through preservation; and
- foster social well-being and a prosperous and diverse economy of a type which does not compromise the ability of the land to replenish renewable resources.

Consistent with public policy expectations, the project committee has prescribed investigative requirements during this EA review which were intended to ensure that environmental, social, economic and cultural sustainability issues associated with the proposed development were examined to determine their overall resolvability. The project committee recognises that some adverse effects (e.g. on environmental values at the project site itself) are unavoidable, and has focused attention of trying to contain such effects so that they have (at most) localised significance.

In considering the sustainability matters raised by this project, the project committee notes the following points:

- *Project feasibility* - According to an independent third-party review of the project, commissioned for the project committee by the EAO, in collaboration with MEI and BCAL, the proposed project layout and operations appear logical and technically and economically feasible over the long term; and the proposed project has the potential to be economically viable and sustainable on a long-term basis, providing that the resort's management is effective in vigorously marketing the resort, and that mutually satisfactory arrangements can be made for government financial assistance for the project.
- *Resort governance* – The project committee did not consider that strategic issues with respect to the effects of the project or its long-term prospects as a sustainable business venture were raised by the choice of governance model available under the *Mountain Resort Associations Act* and the *Municipal Act*. The committee notes that NGR has identified the possibility of contracting various types of service at the resort to First Nations companies, if they wish to participate economically in the project.
- *Mitigation and compensation* - Throughout the EA review, many improvements have been made to the project design, as originally proposed, to avoid or reduce impacts. Commitments from NGR to mitigate impacts should reduce potential project-related impacts on terrain, soils, vegetation, fish and wildlife, while follow-up monitoring by NGR should identify any unforeseen impacts. Some impacts are unavoidable, notably in the Melvin Creek valley, in the vicinity of the development itself. In many such cases, NGR has agreed to compensation measures to offset impacts. NGR has also agreed to assess, and ensure the ongoing efficacy of, mitigation and compensation measures;
- *Waste disposal* - Proposed waste disposal systems are satisfactory and environmentally acceptable. The solid waste disposal scheme can be accommodated within regional solid waste disposal systems and objectives. NGR has proposed a liquid waste disposal system which will safely accommodate the sewage disposal requirements of the resort community and operations at full build-out and over the long term. No unusual special waste issues were identified during project review, and conventional special waste management and spill contingency planning should ensure both adequate environmental protection and public safety.
- *Water supply* - NGR has proposed a water supply system which will ensure the long-term reliability of the quality and supply of water to the resort community and the resort's operations, without adversely affecting either fisheries values or downstream water licensees.
- *Road access* – Providing public highway access to the resort will be technically challenging because of the difficult terrain in lower Melvin Creek. Working with MoTH, MoF and the local timber licensee (Ainsworth), NGR has developed an access road location plan and design which is acceptable to MoTH.
- *Geotechnical Hazards* - From a public safety perspective, both the resort and new access road are located in mountainous terrain which is subject to some risk of rockfalls, debris flows and flooding. Measures proposed to avoid development in areas at risk from geotechnical hazards, and to examine and monitor areas where the risk is uncertain, will ensure that project development sites at the resort and

along the access road, are located in areas which are both geotechnically feasible and safe, ensuring public safety in relation to such hazards.

- *Avalanche control* - From a public safety perspective, both the resort and new access road are located in mountainous terrain which is subject to some risk of snow avalanches, as is the case at many of BC's existing ski areas. Resort and road location and design efforts, coupled with avalanche control measures proposed for the roadway and resort area, will ensure that development is sited in technically feasible locations which address public safety concerns. Given effective implementation of a public safety program to actively manage avalanche risk, the hazard to the public will fall within normal government expectations for approving a development of this type in BC.
- *Water quality* - Impacts on local and regional water quality from the development will be adequately addressed through NGR's commitments to develop and implement an Environmental Management Plan (EMP), Environmental Specifications and Conditions, Master Drainage Plan, water quality monitoring program and appropriate mitigative measures to reduce negative impacts on water quality.
- *Air quality* - NGR has addressed local and regional air quality impacts through commitments to prohibit wood-burning devices (except for one wood-burning fireplace in the public lobby of each building containing more than 100 guest rooms), and to monitor air quality as the resort develops. LNG will be the fuel supply for power generation and building heating. Best available control technology will be used in the power generation plant, further reducing emissions.
- *Environmental management plan* - NGR has developed an EMP which outlines ongoing procedures and practices to protect the environment, including the use of an independent environmental monitor during construction and development of the proposed resort to reduce negative impacts.
- *Fisheries* - There are no fisheries in the upper Melvin Creek drainage (in the vicinity of the resort). Measures to protect water quality and flow volumes in Melvin Creek will ensure that fisheries in Cayoosh Creek and Melvin Creek are not impacted by the resort, and that their sustainability will not be impaired.
- *Wildlife - general* - Localised impacts on some wildlife habitats and species are unavoidable in the immediate development area. However, with effective implementation of the mitigation measures proposed by NGR, the area of wildlife habitat directly affected will be largely limited to within the Melvin Creek drainage. There is no expectation that the sustainability of any wildlife population is at significant risk.
- *Birds* - Two species of interest have been noted - Harlequin Ducks and Spotted Owl. It is not clear that they occur in the Melvin Creek drainage - they were not identified during NGR's field surveys. NGR has committed to further field surveys if the project is granted an EA certificate, and if either species is identified, then to follow up with appropriate mitigation measures and further monitoring. The Melvin Creek is not a key habitat for either species, and the sustainability of neither is threatened by resort development.
- *Biodiversity* - Localised long-term impacts on some vegetation communities and species habitats are unavoidable in the immediate development area, although they will be contained and minimized by careful design, and are not expected to have broader regional significance. NGR has committed to complete biodiversity studies

and to develop a strategy to maintain biodiversity in the resort area, particularly in and around the rarer local habitats.

- *Rare plants* - Field surveys of rare plants were conducted in areas of high priority, based on the extent of a specific habitat within the landscape and the degree of alteration anticipated as a result of development. NGR committed to confirming the presence/absence of threatened or endangered plant species at potential development sites prior to construction, and where possible, to alter site plans to avoid these plants or transplant them to other appropriate habitat.
- *Mountain goats* – Differing interpretations by MELP and NGR's wildlife consultants in their respective analyses of the mountain goat data and project impact potential led EAO to commission a third-party review of issues in dispute by two recognised experts. Both NGR and MELP agreed to accept the findings of the third-party review, which concluded that impacts on goats, while they could be locally significant, would not be significant at the sub-population and population levels. Based on follow-up discussions between NGR and MELP, NGR has committed to fund a monitoring program. Assuming that the monitoring program is carried out effectively, and the results communicated to MELP in a timely manner, adaptive management and the implementation of mitigation measures should acceptably minimize impacts on mountain goats. There is no expectation that the sustainability of the regional goat population is at significant risk.
- *Grizzly bears* – If the project proceeds, grizzly bear habitat in Melvin Creek valley will be unavailable for grizzly bear use, and there is also a risk of bear mortality associated with resort operations. Habitat avoidance and mortality risk in surrounding drainages may also occur, associated with increased people presence. Thus, the resort has the potential for substantial direct and cumulative impacts on the Stein-Nahatlatch grizzly bear population, and on the potential to recover the population in the future. MELP believes that these impacts could be substantially addressed by a combination of mitigation measures, which are essentially two-fold: (1) a comprehensive bear management plan, implemented by NGR – see framework outline in Appendix D; and (2) complementary measures implemented by government agencies (MELP, MoF and BCAL) to manage any increased recreational use of surrounding areas by resort visitors, residents and workers – see MoU in Appendix E. Together, these measures should ensure that the resort does not inhibit grizzly bear recovery goals and overall population sustainability in the region.
- *Cumulative environmental effects* - The project will be largely confined to the Melvin Creek drainage, and will have only limited (and manageable) impacts on surrounding drainages. To ensure that the project does not adversely affect the outdoor recreation and wildlife values in adjacent drainages, NGR has committed to: (1) limiting alpine trails to avoid conflicts with wildlife; (2) to avoid a possible connection into the surrounding valleys; and (3) to place information signage directing the public to use and remain on designated walking and hiking trails. In particular, NGR has committed to a variety of grizzly bear impact management measures to contain project effects which might otherwise be felt over a large area. Adaptive management and implementation of appropriate mitigation measures by NGR, coupled, where necessary, with complementary action by government agencies, should minimize cumulative environmental impacts resulting from the development.
- *Land use - Forestry* - NGR has committed to continue working with Ainsworth Lumber Co. Ltd. and MoF on logging plans in the Melvin Creek drainage to address

forestry issues. NGR has reached an understanding with Ainsworth which will ensure that logging can proceed in a manner compatible with both resort development needs and related environmental management objectives, as well as meeting Ainsworth's timber recovery goals.

- *Land use - Mineral resources* - With respect to mineral resources, NGR has made acceptable commitments which will avoid any unnecessary sterilisation of mineral development potential by: (1) ensuring that resort operations will not conflict with an existing permitted granite quarry, and (2) recognising that mineral exploration and mining activities may be carried out on lands adjacent to the resort.
- *Land use - Outdoor recreation* - Coupled with land use measures implemented by government (e.g. through the Lillooet LRMP or the grizzly bear MoU), the proposed design/layout of the resort and NGR's various commitments intended to limit the impact of the resort on surrounding areas will help to ensure that outdoor recreation and wilderness values in adjacent drainages are maintained, and that the resort will not have a significant adverse effect on recreational use of these valleys.
- *Land use - Guide/outfitting and Trapping* - Localised impacts on guide/outfitting and trapping tenures in the Melvin Creek valley are unavoidable if the resort proceeds. Both tenures cover larger areas. NGR has agreed to make reasonable efforts to negotiate a compensation agreement with the local guide/outfitter. The trapping tenure has only recently been acquired by a new tenureholder, who has made no representations to the project committee.
- *Economic and employment effects* - According to three social and economic impact studies, the project has the potential to create significant income, employment and economic development opportunities for local residents. Estimates of total direct and indirect employment, including both construction and operations, exceed 20,000 person years during the first 14 years of construction /operations activity. If realised, these benefits would contribute substantially to the economic and social well-being of communities, including local Aboriginal communities, if they are will to participate in the project's employment opportunities.
- *Tourism* - The project has the potential to offer a high-quality tourism product which will compliment existing tourism businesses in the region.
- *Accommodation effects* - Significant on-site employee housing is planned, since the resort is located 50 km from the nearest community (Lillooet). In addition, both Lillooet (where most workers will live) and Pemberton have advised the project committee that they are in a position to respond to increased demands for accommodation as resort operations expand. With good forward planning by the resort and local communities, the supply of housing should be sufficient to meet projected population growth locally, associated with resort development.
- *Service delivery effects* - Provincial and local providers of services such as health, education, police, day-care, fire-fighting and social assistance have advised the project committee that mechanisms are in place to respond to fluctuating or increased demand for services in the area as resort operations expand. No strategic concerns were identified in this regard, and service delivery will continue to be sustainable as resort-related demands for services increase.
- *Community stability effects* - The resort would bring change locally, and there will be both beneficial and adverse effects on local communities, especially Lillooet, if the resort proceeds. The project committee concurs with the view of most local residents that, on balance, given its job creation and regional income contributions to

the economy, the resort should have a stabilizing influence on communities which have recently suffered from a local decline in forest sector activity.

- *Health effects* - Adequate provision has been made to address the health-related issues raised by the resort project, including the management of increased health service demands at the resort and in local communities (for hospitals, first aid facilities, ambulances, etc.), and of public health issues at the resort community.
- *Transportation/traffic effects* - Highway #99 is currently able to accommodate the anticipated traffic from the resort, which is not a major factor prompting the need for expect for highway upgrading. Summer traffic today exceeds projected winter resort traffic volumes at full build-out. Normal background traffic on Highway #99 over the next 10 years is expected to warrant incremental improvements, such as the addition of passing or climbing lanes, etc. to accommodate traffic needs. Further analysis of these improvements will be considered in the context of regional corridor needs along Highway #99, rather than as improvements solely associated with resort traffic. Road improvements are subject to provincial funding priorities.
- *Archaeological sites* - Impacts on archaeological resources which are subject to the *Heritage Conservation Act (HCA)* are not expected, since few sites would be expected to occur in the Melvin Creek valley. Approved management measures will protect the only known site in the area. First Nations have identified concerns with respect to sites and features which appear to be more recent than 1846, and therefore not subject to protection under the *HCA*. NGR has committed to work with St'at'imc Bands (if the Bands are willing) to locate any such features not already identified, and develop plans to protect them from resort-related impacts.
- *First Nations* - The project committee has given careful consideration to St'at'imc traditional use concerns, and the record of the committee's consideration of these issues is documented in the relevant issue sections of this report. First Nations have provided information which indicates that some limited traditional hunting and gathering use has been made of Melvin Creek in the past, and that such use may be impacted by the project. In evaluating impacts, the project committee has taken into account the measures proposed by NGR to mitigate and/or compensate for adverse wildlife and vegetation impacts, and to limit access into and out of the Melvin Creek drainage, and also the large size of the claimed St'at'imc traditional territory. The project committee has concluded that potential adverse impacts on the traditional use of wildlife and plants by St'at'imc people can be either prevented or significantly mitigated by means of measures proposed by NGR, and that development of the project will not adversely affect the role of traditional uses in sustaining St'at'imc culture to any significant extent. If St'at'imc communities choose to participate economically in the project, their sustainability could also be affected in a positive sense. NGR, in keeping with its commitment to work with First Nations, has offered substantive opportunities for First Nations participation in the project's economic benefits - see NGR commitments reported in section 6.6.1 and other relevant sections. This has the potential to offset still further any residual adverse effects on traditional uses, while diversifying the economic basis for sustaining St'at'imc communities. Approaches to the various socio-community issues raised in St'at'imc studies are also suggested at appropriate points in this report. One St'at'imc Band is currently engaged in discussions with the province and NGR with respect to its interests and concerns (i.e. impacts on traditional use and Aboriginal rights and

potential economic benefits). Other St'at'imc Bands have recently stated their opposition to the resort proposal.

- *Public views* - While there has been some public concern and opposition expressed, notably by environmental and alpine interests in the Lower Mainland, there is substantial support for the project from the general public in the Whistler-Pemberton-Lillooet corridor, and from the municipal and regional governments in the area. EAO has received several hundred written submissions during the resort review. Most of them support resort development, and most supporting submissions originate from local communities, basing their support on the prospects of employment and regional income prospects. A smaller, but still significant, number of submissions have either identified concerns or expressed opposition to the resort proposal, citing a variety of issues, notably impacts on backcountry and wildlife values (especially grizzly bears and goats), cumulative environmental effects, increased Highway #99 traffic volumes and doubts about project viability.

CEAA Screening

DFO, a Responsible Authority as defined in the CEAA, has completed its review of the potential environmental impacts of the proposed Melvin Creek/Cayoosh mountain resort project. This review has been based on information provided by the proponent, provincial ministries, First Nations and the public, and also on expert advice provided by staff from Natural Resources Canada, Environment Canada, Parks Canada and DFO. DFO considered all of the relevant factors required by section 16(1) of the CEAA, including the environmental effects of the project and their significance. DFO has concluded that the project is not likely to cause significant adverse environmental effects, providing that the mitigation and monitoring measures identified in documentation related to the environmental assessment are effectively implemented. In accordance with section 20(1)(a) of the CEAA, such a determination enables the DFO-CCG to proceed, if appropriate from a navigation perspective.

The Melvin Creek/Cayoosh project committee's recommendations report – this document – also meets the requirements for a screening report pursuant to the *Canadian Environmental Assessment Act (CEAA)*.

**NGR's DOCUMENTATION AND
CORRESPONDENCE**

APPENDIX A

APPENDIX A

DOCUMENTATION AND CORRESPONDENCE FOR THE MELVIN CREEK/CAYOOSH MOUNTAIN RESORT PROJECT¹

1. November 7, 1996 NGR Resort Consultants (NGR) - Cayoosh Resort Application (2 volumes) for a project approval certificate, submitted under the *Environmental Assessment Act* (Act).
2. April 6, 1997 NGR letter in response to comments received from members of the public during the application review.
3. April 6, 1997 NGR letter in response to comments on the application made by Resort Municipality of Whistler (Whistler) and the District of Squamish (Squamish) pertaining to Highway #99 issues.
4. April 6, 1997 NGR submission of letter report entitled *Preliminary Visitor Analysis*.
5. April 10, 1997 NGR letter in response to comments on the application made by Squamish Lillooet Regional District (SLRD).
6. April 10, 1997 NGR letter in response to comments on the application made by Squamish.
7. April 23, 1997 NGR letter in response to comments on the application made by Whistler.
8. April 24, 1997 NGR submission of report entitled *Supplemental Information to the Roads & Servicing Appendix* (04/97) by Urban Systems Ltd.
9. April 24, 1997 NGR submission of report entitled *Groundwater Potential and Secondary Effluent Disposal Evaluation Cayoosh Resort, Melvin Creek, B.C.* (04/97) by EBA Engineering Consultants Ltd. (EBA).
10. May 5, 1997 NGR letter in response to comments on the application made by Ministry of Small Business Tourism and Culture - Tourism (MSBTC - Tourism).

¹ Correspondence that covers project information and exchanges from NGR, but not necessarily all including commitments confirmed by NGR.

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| 11. May 8, 1997 | NGR letter in response to comments on the application made by the Office of the Fire Commissioner (OFC). |
| 12. May 8, 1997 | NGR letter in response to comments on the application made by Ministry of Health (MoH). |
| 13. May 9, 1997 | NGR letter in response to comments on the application made by Ministry of Municipal Affairs (MMA). |
| 14. May 9, 1997 | NGR letter in response to comments on the application made by Ministry of Small Business, Tourism and Culture - Archaeology Branch (MSBTC - Archaeology). |
| 15. May 9, 1997 | LGL Ltd. (LGL - on behalf of NGR) letter to Ministry of Environment, Lands and Parks (MELP), clarifying remaining work to be undertaken to resolve outstanding issues with the proposed development, raised by MELP at an April 29, 1997 meeting. |
| 16. May 12, 1997 | NGR letter in response to comments on the application made by Ministry of Employment and Investment (MEI). |
| 17. May 12, 1997 | NGR letter in response to comments on the application made by Ministry of Forests (MoF). |
| 18. May 12, 1997 | NGR letter in response to comments on the application made by BC Parks (MELP). |
| 19. May 12, 1997 | NGR letter in response to comments on the application made by BC Lands (MELP). |
| 20. May 12, 1997 | NGR letter to project committee members responding to comments made in the <i>BC Environmental Report</i> (Spring 1997 edition). |
| 21. May 12, 1997 | ARC Environmental Ltd. (on behalf of NGR) letter to Fisheries and Oceans Canada (DFO) in response to comments made on the application. |
| 22. May 15, 1997 | NGR letter in response to comments on the application made by Ministry of Transportation and Highways (MoTH). |
| 23. May 15, 1997 | NGR letter in response to comments on the application made by MELP. |

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| 24. May 21, 1997 | NGR submission of letter from ARC Environmental Ltd. in response to MELP comments on water quality and fisheries issues. |
| 25. July 21, 1997 | NGR submission of report entitled <i>Evaluation of Potential In-Ground Secondary Effluent Disposal Areas: Cayoosh Resort</i> (07/97), by EBA. |
| 26. July 23, 1997 | Kerr Wood Leidal Associates Ltd. (KWL) letter to NGR, clarifying issues associated with the proposed resort access road, and responding to comments made by MoTH in a June 9, 1997 letter. |
| 27. September 22, 1997 | NGR letter commenting on the draft project report specifications. |
| 28. September 22, 1997 | NGR letter discussing First Nations issues associated with the proposed resort. |
| 29. September 23, 1997 | NGR letter responding to comments on the draft project report specifications made by public individuals and groups. |
| 30. October 6, 1997 | NGR letter to MELP, committing to contribute financial resources towards further mountain goat monitoring in the project area. |
| 31. October 21, 1997 | NGR letter commenting on Volume 2 of the final project report specifications. |
| 32. October 24, 1997 | NGR letter commenting on Volume 1 of the final project report specifications. |
| 33. May 26, 1998 | NGR letter responding to comments on the proposed resort project made by members of the public. |
| 34. July 6, 1999 | NGR Cayoosh Resort Project Report (2 volumes), submitted in support of an application for a project approval certificate under the <i>Environmental Assessment Act</i> . |
| 35. August 12, 1999 | Updated Water Systems information (produced by Urban Systems Ltd.) provided by NGR in supplement to the Cayoosh Resort Project Report (Volume 1, Part IV - Resort Infrastructure). |
| 36. October 26, 1999 | NGR letter responding to comments made by Squamish regarding the project report. |

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| 37. October 26, 1999 | NGR letter responding to comments made by MoH regarding the project report. |
| 38. October 26, 1999 | NGR letter responding to comments made by the Ministry of Energy and Mines regarding the project report. |
| 39. December 9, 1999 | NGR summary response to public comment submitted regarding recreation and tourism effects. |
| 40. January 12, 2000 | Summary list of proponent commitments with respect to conservation and environmental protection measures provided by NGR in response to MELP and DFO requests. |
| 41. January 18, 2000 | NGR response to comments made by MELP regarding environmental, and geotechnical issues (i.e. ridge spreading, debris flows/torrents, flooding, channel stability, and wetlands). |
| 42. January 18, 2000 | NGR submission of report by EBA, entitled, <i>Ridge Spreading and Associated Geohazards - Melvin Creek, BC</i> (12/99). |
| 43. January 18, 2000 | NGR submission of <i>Environmental Management Plan</i> (revised 12/99) and <i>Environmental Specifications and Conditions</i> for the proposed resort. |
| 44. January 18, 2000 | NGR submission of <i>Mountain Goat Data and Issues</i> report by Wildeor Wildlife Research & Consulting (Wildeor) and LGL, a compilation/ chronology of the evolution of the issues pertaining to potential impacts on mountain goats. |
| 45. January 18, 2000 | NGR submission of <i>Wildlife Habitat and Vegetative Impact Assessment</i> report in response to MELP comments on the project report (Vol. 1, Part V). |
| 46. January 18, 2000 | NGR submission of <i>Proponent Concerns with MELP West Ridge Mitigation Recommendations</i> , in response to MELP comments regarding the adjustment of ski lift location to avoid/minimize impacts on mountain goats. |

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47. January 18, 2000 NGR submission of *Mountain Goat Movements Along Selected Ridges in the Cayoosh Study Area* (01/00) report by Wildeor and LGL (Hatler and Searing), containing an analysis of the nature, timing, and extent of mountain goat ridge movements in the vicinity of the resort area.
48. January 18, 2000 NGR submission of *An Overview of Ski Area Experience with Mountain Goat, Grizzly Bear, and Other High-Profile Species in the Rocky Mountain National Parks and Environs* (01/00) report by IRIS Environmental Systems, containing an overview of the ski area/wildlife interaction experience of Rocky Mountain ski areas.
49. January 27, 2000 NGR submission of *Grizzly Bear Issues Associated with the Cayoosh Resort Proposal* report by David Hatler in response to late public (SPEC and McCrory Wildlife Services Inc.) submissions to the review.
50. February 10, 2000 Summary list of commitments pertaining to water, waste and pollution prevention, submitted by Urban Systems Ltd. on behalf of NGR.
51. February 18, 2000 NGR submission of response by Sector Environmental Resource Consulting to comments made by DFO on the *Cumulative Environmental Effects* report included in the project report.
52. February 28, 2000 NGR response to comments made by MELP regarding potential environmental impacts resulting from access road location/construction.
53. February 29, 2000 Revised list of commitments pertaining to water, waste and pollution prevention submitted by Urban Systems Ltd. on behalf of NGR.
54. March 5, 2000 NGR letter indicating acceptance of the conclusions and recommendations of the *Independent Third Party Evaluation of the Proposed Cayoosh Resort Development and Mountain Goat Issues* report (02/2000) prepared by Timberland Consultants Ltd. and Encompass Strategic Resources (Poole and Hebert). NGR also formally committed to undertake all of the recommendations of the report.

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| 55. March 14, 2000 | NGR response to comments made by Environment Canada (00/03/10) regarding wetlands, riparian areas migratory birds, and liquid waste management. |
| 56. March 14, 2000 | NGR response to comments made by MELP (00/03/01) regarding wildlife habitat and vegetative impact assessment issues. |
| 57. March 14, 2000 | NGR response to comments made by MELP (00/02/29) on NGR's previously submitted <i>Environmental Management Plan and Environmental Specifications and Conditions</i> . |
| 58. March 14, 2000 | NGR response to comments made by MELP (00/03/02) regarding environmental, resource management, and technical issues. |
| 59. March 20, 2000 | NGR submission of a letter report entitled <i>Cayoosh Summer Visitor Profile</i> . |
| 60. March 21, 2000 | NGR correspondence confirming its commitment to develop and implement a mountain goat monitoring program following EA Certificate approval. |
| 61. March 24, 2000 | NGR correspondence regarding Harlequin duck and wood-burning commitments. |
| 62. March 24, 2000 | NGR submission of response by David Hatler (Wildeor) to MELP comments regarding wolverine issue treatment in the project report. |
| 63. March 30, 2000 | NGR correspondence responding to comments made by MELP, DFO and MoTH regarding the management of explosives during project construction and ongoing avalanche control to avoid water quality impacts. |
| 64. March 30, 2000 | NGR submission of revised <i>Cumulative Environmental Effects</i> (03/00) report by Sector Environmental Resource Consulting in response to DFO comments on the original report (V. 2, s. H of the project report). |
| 65. March 30, 2000 | NGR correspondence confirming its commitment to undertake Spotted Owl surveys prior to any timber harvesting in the Melvin Creek valley. |
| 66. April 22, 2000 | NGR response to issues raised in St'at'imc report entitled <i>Review Of Archaeology Studies Regarding Proposed Cayoosh Creek Resort</i> (03/00). |

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| 67. April 22, 2000 | NGR response to issues raised in St'at'imc report entitled <i>St'at'imc Socio-Economic Study</i> (01/00). |
| 68. April 22, 2000 | NGR response to issues raised in St'at'imc report entitled <i>Comments on Transportation and Infrastructure Issues</i> (03/00). |
| 69. April 22, 2000 | NGR response to issues raised in St'at'imc report entitled <i>St'at'imc Cultural Heritage Study</i> (03/00) |
| 70. April 24, 2000 | NGR submission of updated resort-generated employment and investment estimates. |
| 71. April 26, 2000 | NGR letter outlining its level of agreement with Ainsworth Lumber regarding forest harvesting prescriptions for the Melvin Creek valley, and describing the relationship between Ainsworth's harvest plans and the commitments for habitat protection made by NGR during the EA review. |
| 72. May 9, 2000 | NGR submission of a report entitled <i>Winter/Summer Resort Activity Analysis</i> (05/00). |
| 73. May 23, 2000 | NGR submission of Urbanics Consultants Ltd. response to comments made in the <i>St'at'imc Socio-Economic Study</i> (01/00) |
| 74. June 27, 2000 | <i>A Bear Management Plan for the Proposed Melvin Creek/Cayoosh Resort: Annotated Outline</i> , negotiated between NGR and MELP |
| 75. June 27, 2000 | NGR submission of revised <i>Cumulative Environmental Effects Assessment</i> report by Sector Environmental Resource Consulting, incorporating updated information pertaining to the grizzly bear issue. |

NGR's COMMITMENTS

APPENDIX B



APPENDIX B

COMMITMENTS MADE BY NGR RESORT CONSULTANTS INC. WITH RESPECT TO THE DESIGN, LOCATION, CONSTRUCTION AND OPERATION OF THE MELVIN CREEK/CAYOOSH MOUNTAIN RESORT PROJECT

1. Resort Governance

The proponent:

- agrees that resort security, snow-clearing, road maintenance and other similar services could be provided by St'at'imc-based development corporations, subject to agreement with NGR and appropriate agencies; and
- agrees that there could be opportunities for Reserve-based companies to provide services of all types to the resort, subject to agreement with NGR and appropriate agencies.

2. Geotechnical Hazard Issues at Resort

The proponent has committed to:

- not apply for or locate any habitable structures within any and all hazard areas (snow avalanche, rock avalanche or slides, floodplain and debris flow), unless site-specific ground-proofing has been carried out, and practical mitigation measures indicating such sites are safe from risk are proposed and accepted by regulatory agencies;
- locate all development outside areas of risk (rockslides, debris flow, and flooding) or above the 1-in-200-year potential flood plain;
- contract registered engineer(s) and/or recognized experts specializing in structural, geotechnical and snow avalanche work to design all structures and mechanisms and to document ongoing maintenance schedules, inspections reports and filing procedures;
- undertake a site-specific rock fall hazard assessment associated with any accommodation development prior to making applications for land and all subdivision applications;
- complete a two-staged hazard assessment as follows: (1) during the ski area master plan stage, conduct an overall hazard assessment to characterize risk hazard and to identify associated planning recommendations; and, (2) at the time of subdivision application, conduct more detailed site-specific and field-based assessments of development sites. (**Note** - The hazard assessment will address the following: prediction of probable frequency and magnitude of debris flow events, delineation of run-out zones (identifying high-, medium- and low-risk areas), elevation-relief-based mapping of areas at risk, and site-specific setbacks for hazards. The risk mapping is to be applied to the detailed resort layout in the ski area master plan to determine whether any areas must be removed from development, and/or appropriate mitigation measures implemented. The debris flow study, final design, and determination of debris flow and debris torrent protection setbacks are to be

undertaken by a qualified geotechnical engineer, and must be provided to the satisfaction of the MELP RM-Water);

- undertake remote monitoring for ground movement (including site-specific hydrological, hydrogeological and geotechnical studies to be submitted with development plans), once access is available to the Melvin Creek valley and prior to any site specific development applications; and,
- employ appropriate engineering design measures to reduce risk when designing in areas of risk for slope movement. Plans are to be provided to the satisfaction of the MELP RM-Water;
- take every effort to maintain/maximize as many riparian-related values as possible in other areas of the valley to replace the wetland areas lost to development for the upper village (**Note** - This is to include preserving other wetland areas in their natural state in order to provide specific wetland capabilities in the Melvin Creek drainage);
- conduct flow monitoring at various locations along Melvin Creek (see NGR's *Water Supply* commitments - section 6.2.2.1);
- provide additional detailed floodplain and channel information during the CASP process (**Note** - This is to include standard site-specific urban planning design details to protect from flood and channel stability hazards, such as vertical and horizontal property setback distances, to ensure that properties are not subject to flooding. Develop site mitigation plans which reflect acceptable engineering practices. All assessments and plans are to be completed to the satisfaction of the MELP RM-Water);
- locate all residential and commercial buildings above the 1-in-200-year flood level, and locate all living space and goods potentially damageable by flood waters 1.5 m or greater above the natural boundary of applicable streams;
- locate all residential and commercial buildings outside the riparian buffer (per DFO's *Land Development Guidelines for the Protection of Aquatic Systems*).
- undertake a hydrological study of the watershed at the CASP stage (see section 6.2.2.1 - Water Supply);
- minimize destabilisation of Melvin Creek by preserving the riparian zone through retention of the existing trees and implementing windfirm design measures along the riparian zone edges, outside the riparian buffer, whenever possible;
- maintain stream bank vegetation wherever possible (**Note** - . Plans for any removal of vegetation are to be supplied to the satisfaction of the MELP RM-FWH);
- use soft-engineering habitat-sensitive techniques to protect against erosion, where applicable;
- assess and appropriately engineer stream crossings at the permitting stage to the satisfaction of MELP RM-FWH and MoTH;
- place bridge footings outside the stream bed to minimize impacts to fish habitat;
- detail and finalize the Environmental Management Plan (EMP) and the Environmental Specifications and Conditions (ESC) to the satisfaction of the MELP RM-PP and RM-FWH, prior to construction and adhering to the EMP and the ESC during project construction and operation, and in relation to the EMP completed during the EA review:
 - obtain all environmental approvals, permits and agreements prior to commencement of construction;

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- comply with federal, provincial and local environmental legislation, regulations, permits and approvals during resort construction and development;
- adhere to the ESC, which has been developed to assist with ensuring compliance with regulatory requirements during construction and operation.
- determine the environmental conditions and sensitivities of areas that could be impacted by resort infrastructure development including completing any necessary field and secondary source investigations (**Note** - This would include areas inside and outside the development site [e.g. intersections on roads, bus staging areas, sewer lines, gas lines, etc.]);
- provide to regulatory agencies the following: detailed mitigation measures, time frames, strategies for environmental quality control and risk management, detailed monitoring programs to assure compliance, and criteria for assessing success or failure for each measure, incorporating approved measures into the project design at the appropriate stage;
- design a water quality sampling program and determine site selection criteria to identify sites which contribute to Total Suspended Solids (TSS) and other contaminants in streams during instream construction activities and other activities that could produce silt runoff;
- provide strategies for the management of excess materials;
- define the environmental design requirements and considerations under each of the following activities, as land use, zoning and subdivision development plans are finalized: instream work; clearing and grubbing (including, but not limited to roads, ski trails, ditching, pipeline and other utility works); stripping and grading; burning and slash disposal; gravel excavation; drilling and blasting; construction discharges; erosion and sediment control; and chemical, fuel and oil handling;
- employ a qualified environmental monitor who will determine compliance with the environmental specifications and terms of approvals and permits (**Note** - This is to be achieved through the monitor providing input to the detailed designs, being on-site during all land clearing and construction activity, and monitoring the success of mitigative measures. The monitor will be given the authority to suspend construction activities which are causing unacceptable environmental harm, and to prevent environmental degradation until a mitigative solution is established. The monitor will report directly to the designated agency(ies)' contact(s), and act independently from construction management);
- provide an Emergency Response Plan which deals with special waste and dangerous goods spills to DFO and MELP for approval within 15 days after contractor(s) receive notice of award of the contract, and prior to commencement of work (**Note** - The plan is to follow the provincial *Spill Contingency and Emergency Plan Guidelines* and comply with applicable provincial and federal acts and regulations);
- ensure that contractors provide an Emergency Response Plan and adhere to NGR's Overall Emergency Response Plan;
- ensure contractors comply with conditions of all permits, including providing agency notifications, facilitating agency inspections of the job sites, and complying with specific construction requirements; and

- build the EMP into all contracts, and commit subcontractors to make the EMP part of any works subcontracted; and
- report monitoring results to the appropriate agencies at agreed-upon intervals, to ensure an effective feedback mechanism which allows the results of any monitoring to influence the implementation of any mitigative measures adopted.

3. Avalanche Hazard Issues at Resort

During the community plan and zoning application stage, the proponent has committed to:

- locate no buildings other than lift towers and terminals in any areas of avalanche hazard (**Note** - Some lift towers and terminals may require protection by either terrain alterations or protective devices);
- co-operate and work with MoTH to establish an avalanche monitoring program for the road which would include:
 - several high-elevation stations within the ski area to forecast upper elevation risks for those avalanche paths which cross the access road;
 - an emergency response team, to be organized solely by the proponent through the Cayoosh professional ski patrol and the resort's designated avalanche expert; and
 - an access road avalanche mapping program;
- develop the avalanche control program to minimize disturbance of mountain goats while on winter range or during kidding and early rearing (**Note** - This includes provisions, as appropriate, to maintain a sight distance of 2000 m from mountain goats and blasting or helicopter activities. The plan is to be developed to the satisfaction of the MELP RM-FWH and MoTH).
- develop the avalanche control program to minimize disturbance of mountain goats while on the winter range or during kidding and early rearing (i.e. helicopters and blasts 2000 m sight distance away, where possible) (**Note** - The program plan is to provide a mechanism to assess the residual impacts of any disturbance on mountain goats (see mountain goat monitoring issues, discussed in section 6.2.3.2.2), and is to be developed to the satisfaction of the MELP RM-FWH and MoTH, and with the proponent's wildlife consultants);
- during permitting, complete a detailed snow avalanche control program for all skiable terrain, with daily snow avalanche monitoring carried out by expert avalanche personnel;
- implement avalanche control predominantly through the use of 'on-ground' control methods (**Note** - In some situations, helicopter-placed explosives, and possibly a projectile control method or mechanism such as Gaz-Ex exploders, could be required);
- provide avalanche protection through appropriate mitigative designs such as the use of terrain modifications (i.e. diversion mounds and berms) where deemed necessary; and,

- conduct daily assessments for all avalanche paths capable of reaching the valley floor or road, co-ordinated with MoTH avalanche personnel (**Note** - All avalanche control work for the access road will be managed and directed by MoTH).

Note – For convenience, all of NGR's commitments with respect to avalanche hazard issues as they relate to both the resort and the new access road are listed in this section, which otherwise focuses on the resort, rather than being divided between this section and section 6.1.2.2.

4. Wildfire Design Issues at Resort

The proponent has committed to:

- complete a wildfire risk assessment prior to construction;
- develop a system of ski trail fire breaks that will assist in the protection of the development and building sites against wildfire; and
- ensure fuel loads are reduced to a moderate rating.
- in riparian areas, leave on the ground any snags that need to be removed for safety purposes, where possible, to provide habitat for wildlife species;
- employ an individual who has completed the 'Wildlife/Danger Tree Assessment Course' and the 'Stand Level Biodiversity Course' to assess snags; and
- if possible, schedule tree falling (and other construction activities) for a time which does not disturb nesting birds.

5. Access Road Location and Design Issues

The proponent has committed to:

- minimize damage to fish habitat by placing bridge footings outside the stream bed on Cayoosh Creek;
- finalize detailed route engineering, following EA certification (and prior to CASP approval); and,
- abide by the necessary mitigation forthcoming from the application for a *NWPA* approval.

6. Access Road Avalanche and Terrain Hazard Issues

Note – For convenience, all of NGR's commitments with respect to avalanche hazard issues as they relate to both the resort and the new access road are listed in section 3.

7. Solid Waste Management

The proponent has committed to:

- develop waste recycling and reduction plans in accordance with the requirements mandated by SLRD by-laws;
- accept the terms and conditions for SLRD's management strategy for the Lillooet Landfill;
- identify all criteria to meet provincial standards during the ski area master plan design stage, if the Lillooet Landfill is to be considered (**Note** - If the landfill requires modification, then NGR will enter into an agreement with SLRD to cover those incremental costs identified by SLRD);
- work with the SLRD to develop and implement a special waste program and to include the resort in the Regional Solid Waste Management Plan;
- work with the SLRD to develop a public education program for special wastes and dangerous substances handling and disposal;
- install animal-proof garbage containers and storage facilities;
- develop public information programs on littering and garbage disposal;
- collect residential garbage from a central site located below the lower village site;
- collect commercial garbage from each building in an animal-proof manner, and compact within the resort prior to disposal;
- reduce any impacts by only operating equestrian activities from July to mid-September (**Note** - No horses would be present during the late fall to spring period);
- locate riding trails on dry slopes (**Note** - Trails would be located to avoid all areas of environmental sensitivity and areas where human activity and wildlife interest conflict); and,
- refer its applications to MELP on any trail and corral plans (**Note** - Equestrian facilities will be required to comply with the *Agricultural Waste Control Regulation* and its associated Code of Practice).

8. Liquid Waste Management

The proponent has committed:

- address liquid waste management issues when the Permit to Discharge Treated Wastewater is applied for, to the satisfaction of the RM-Pollution Prevention;
- install a rapid infiltration system to ground or other acceptable system to the satisfaction of the MELP RM-Pollution Prevention;
- institute a demand management program to minimize wastewater volumes;
- use gravity for collection system motivation versus pumping to minimize energy consumption;
- use aerobic treatment systems for odour prevention and reduction;
- adopt advanced secondary treatment (BOD & TSS less than 10 mg/l) as the minimum level of sewage treatment if the Melvin Creek fan location is selected for rapid infiltration disposal, and achieve wastewater quality consistent with MELP municipal sewage regulations, if alternative sites closer to the reservoir are selected;

- implement tertiary treatment if advanced secondary treatment is shown to be inadequate;
- establish monitoring wells up-gradient and down-gradient of the rapid infiltration basins to assess soil renovation of the treated sewage effluent;
- adopt ultraviolet light disinfection if the down-gradient monitoring demonstrates inadequate removal of fecal coliforms;
- test for phosphorus to determine if phosphorus removal in the wastewater treatment process is needed (**Note** - Results from the phosphorous study should be incorporated into the design of the liquid waste disposal system);
- incorporate flow equalisation processes in front of the treatment process, where required;
- further investigate the additional treatment options available for converting waste bio-solids from the sewage treatment plant into beneficial use products, wherever financially feasible;
- employ pipe anchors, where necessary to stabilise pipes in steep sections;
- utilise existing old logging road alignments (to the greatest extent possible), where pipelines depart from roadways;
- use influent flowmeters to the wastewater treatment plant and disposal site (if disposal is at the Cayoosh/Melvin Creek fan), to ensure that reconciliation of flows is possible, in order to verify that there are no losses in the long effluent pipeline;
- divert stormwater around the sewage treatment and collection works, and ensure that suitable bylaws are in place to preclude the discharge of roof drains or foundation drainage systems or sump pump systems, where drainage is below pipeline elevations, to the sanitary sewer system;
- if the piping system is below the elevation of the parkade, drainage sump pumps that drain the floor of covered parkades must be connected to sanitary system (**Note** - If parking drainage is a gravity system, it must also be connected to the sanitary system);
- provide soils data to DFO to verify that soils can handle the expected discharge volumes;
- meet section 36(3) of the *Fisheries Act* and section 35(1) of the *Migratory Bird Regulations* under the *Migratory Birds Convention Act* for effluent discharge, if disposal into surface waters is chosen, instead of ground disposal;
- ensure that the wastewater treatment plant is equipped to manage any potential power outages;
- ensure that backup infiltration ditches are built at or near the location of any rapid infiltration system, in order to handle any potential field failure;
- if the alternative disposal site near the confluence of Melvin Creek and Cayoosh Creek is utilised:
 - install a gravity-fed pipeline along the Melvin Creek access road/logging road to convey treated effluent to an alternate disposal site; and
 - rehabilitate the pipeline right-of-way in the same manner as other areas of disturbance, except where located in the access road;
- agree that the sanitary sewer system will be owned, operated and maintained by the SLRD, but that partnering between the SLRD and NGR could be available to facilitate its efficient operation and maintenance;

- ensure that the identification of gravel pits in the Melvin Creek valley will not interfere with the selection of the sewage disposal area, since identification of a wastewater disposal site has a higher priority than gravel pit siting.
- develop a Master Drainage Plan prior to commencing construction, which will include the following control practices:
 - address runoff from all infrastructure, including villages, ski runs, golf courses and roads, to meet levels set in the *CCME Total Particulate Matter, Canadian Water Quality Guidelines for the Protection of Aquatic Life* ;
 - match proposed development to the existing topography as much as possible;
 - schedule earthwork and construction activities during the driest periods, and suspend activities during periods of heavy rainfall;
 - retain as much existing vegetation as possible, and revegetate disturbed areas as soon as possible after construction;
 - divert runoff generated off-site away from exposed soils;
 - minimize the length and steepness of slopes, provide check dams to limit the length of drainage paths, and reduce flow velocities where concentrated flows occur;
 - where soil erosion may not be prevented, provide and maintain sediment control facilities, such as sediment traps and ponds, to capture sediment and prevent it from reaching sensitive watercourses;
 - maintain erosion and sediment control measures during and after construction; and,
 - where possible, maintain vegetation leave areas and riparian setbacks (15 to 30 meters) from development in accordance with the *Land Development Guidelines for the Protection of Aquatic Systems* and subject to ski area master plan approval by the appropriate authorities;
- establish a program to regularly monitor the water quality of all significant streams and lakes in the area, as well as stormwater runoff in drainage ditches and piped storm sewers;
- prepare a Stormwater Management Plan which will include diverting uncontaminated snowmelt and stormwater around the development;
- use vertical and horizontal setbacks for all creeks;
- construct erosion-resistant road-side ditches by using design and materials consistent with state-of-the-art practice;
- develop erosion and sediment control plans;
- employ on-site environmental monitors during earthwork construction activities;
- provide all on-site contractors with a regularly updated EMP; and
- in constructing the two villages, ski runs, golf course and roads, except where technically impossible, follow the *Urban Runoff Quality Control Guidelines for BC*; *Land Development Guidelines for the Protection of Aquatic Habitat*, *Stream Stewardship: A Guide for Planners and Developers*; *Guidelines to Protect, Maintain and Enhance Fish and Wildlife Habitat On and Adjacent to Proposed Golf Course Developments on Lowland Areas*; and *Greening Your BC Golf Course: A Guide to Environmental Management* (DoE, Fraser River Action Plan).

9. Special Wastes, Hazardous Wastes, and Emergency Preparedness

The proponent has committed to:

- develop detailed plans at the permitting stage to address concerns regarding special wastes, hazardous materials and emergency preparedness;
- prior to any site disturbances, develop a special waste management and spill contingency plan which includes response procedures during emergency situations, to the reasonable satisfaction of the MELP RM-PP;
- ensure that waste management plans are in compliance with the CCME *Code of Practice of Underground and Above Ground Storage Tank Systems containing Petroleum and Allied Petroleum Products*, and the CSA standard practice CAN/CAS-Z731-M91 *Emergency Planning for Industry* or MELP's *Guidelines for Industry Emergency Response Contingency Plans*;
- require all contractors working at the resort construction site to prepare Spill Contingency and Emergency Plans to prevent and deal with spills;
- develop an overall spill and special waste management plan to provide direction and information for contractors in developing their own plan; and
- place the onus for spill and special waste handling with contractors, and for on-site co-ordination, with the environmental monitor.

10. Water Quality Issues

The proponent committed to:

- develop a water sampling and quality monitoring program, to the satisfaction of the MELP RM-PP, with protocols and parameters consistent with guidelines identified in the *BC Field Sampling Manual*, 1996, and the *BC Environmental Laboratory Manual For the Analysis of Wastewater Sediment and Biological Materials*, 1994;
- conduct baseline monitoring once access is established, and before significant disturbance occurs (preferably for one year)
- undertake sampling several times per year, and include discharge (peak-flow and low-flow runoff periods), nutrients, NFR, turbidity, pH, conductance and temperature parameters;
- carry out laboratory analysis twice per year (May and August) for baseline on metals (standard metal package at suitable detection limits), fecal bacteria and anions (chloride, sulphate, fluoride);
- develop a water quality monitoring program to conduct routine samples from stormwater and wastewater systems, once the resort is in operation;
- implement monitoring by either resort staff trained as water quality technicians or by contracting out;
- subject to monitoring results, and based on the total particulate matter criteria in the guide *Canadian Water Quality Guidelines for the Protection of Aquatic Life* (CCME), 1999, develop and undertake appropriate mitigative measures to reduce negative impacts on water quality.

- rehabilitate the pipe trench surface where it diverges from the main road, to minimize non-point-source erosion and sediment concerns;
- re-use salt recovered from drainage holding ponds for uses such as dust control on gravel roads and parking lots, wherever possible;
- discharge salt to the environment only after approval by MELP;
- address potential ARD concerns, meeting ARD regulations set out in the *BC Mines Guidelines for Metal Leaching and Acid Rock Drainage in Mineral Management*;
- undertake site-specific mitigation by managing water runoff to safe ground discharge areas or holding ponds in the event that ARD is identified (**Note** - If a large, highly acidic deposit is to be disturbed or excavated, the above mitigation may be insufficient, and alternate mitigation measures would be developed);
- efficiently use blasting compounds during road construction in order to reduce the amount of nitrates released into the environment, including the use of emulsion-type blasting agents whenever environmental conditions dictate (**Note** - Monitoring of effects is to be conducted under the water quality monitoring program);
- ensure that water encountered during blasting will not leave the site and enter fish-bearing watercourses,
- ensure that culverts are installed in compliance with the following:
 - at locations shown on the final detailed construction drawings to minimize erosion and sedimentation, and in a manner that permits fish passage where fish species are present;
 - during low-flow periods, whenever possible (**Note** - During installation, channel flows shall be diverted from the culvert site and the culvert installed in the dry. Such diversions shall ensure that siltation is kept to a minimum and the stream controlled at all times. For any works in fish-bearing reaches, the Contractor may be required to provide for fish passage during culvert installation at the site, as required by the Environmental Monitor); and
 - on the natural gradient of the streambed, not horizontally (**Note** - Culvert inverts shall be installed below the natural stream bottom).

11. Air Quality Issues

The proponent committed to:

- restrict the use of wood-burning appliances in all accommodation units, with the exception of public buildings exceeding 100 rooms, where one natural wood fireplace would be permitted;
- encourage the SLRD to impose a moratorium on all wood-burning fireplaces, if studies indicate that their use in major buildings is contributing to air quality problems; and
- use natural gas as the fuel supply for power generation and building heating (**Note** - Best available control technology would be used in the power generation plant and all generation engines would be equipped with heat-recovery jackets, with the recovered heat distributed to nearby buildings).

12. Accidents and Malfunctions

The proponent committed to:

- include detailed information pertaining to accidents and malfunctions, together with the EMP, as provisions for project construction, and incorporate them into all system environmental management measures.

13. Water Supply

The proponent has committed to (all applicable activities are to be completed to the satisfaction of the MELP RM-Water):

- commence diversion of water from the Haylmore watershed after the irrigation season;
- develop a water monitoring program to the satisfaction of the RM-Water (**Note** - The program is to include the collection of baseline data (to be initiated following completion of the access road), and collection of data during construction and operation);
- monitor stream flow at (or near) the outlet of Melvin and Second Lakes for a designated period prior to development;
- complete a detailed water availability analysis on the Melvin Creek and Second Creek watersheds;
- establish a database by monitoring quantities of diversion and return flows;
- analyse the results of the monitoring to determine whether the resort development has an impact on flows from Melvin and/or Second Lakes, Melvin Creek and/or Cayoosh Creek;
- store annual water requirements during the period of the year when unlicensed water is available (June & July) and when the streams are in freshet conditions (**Note** - Storage of total requirements at build-out may not be required if it can be proven that post-development flows in Melvin Creek are equal to pre-development flows, or that wastewater discharge is equal to waterworks usage);
- minimize the height of water storage dams, whenever possible, to minimize the impact on riparian habitat;
- maintain existing flows in Melvin and Cayoosh Creeks, except during freshet, when creek flows would be reduced during reservoir refilling;
- develop groundwater sources to the greatest extent possible, which will postpone and minimize the need to store/divert surface water sources;
- study impacts resulting from storage, prior to applying for a water license for Second Lake;
- design, build and operate the potable water supply system to municipal standards, with ownership and operation retained by the SLRD (**Note** - Partnering between SLRD and NGR could be available to facilitate its efficient operation and maintenance);
- develop and implement a full water conservation program for the resort, including the mandatory use of modern water-conserving plumbing fixtures, and an ongoing public education program directed at commercial operators, residents and guests;

- institute a fully metered delivery system, with a volume-based user charge;
- utilize gravity to pressure water systems;
- minimize forest clearing requirements for pipelines when not on a roadway, by using skiway alignments wherever possible;
- investigate the potential of using reclaimed water for irrigation, snowmaking and/or toilet flushing;
- institute a mandatory fire sprinkler system in all public and private buildings, including single-family structures;
- utilise high-efficiency motors for all pumping requirements;
- consider filtration as a second barrier to pathogens and turbidity for the drinking supply system;
- develop and implement measures to ensure that water flows through the lakes when there is no authorization to store water;
- as part of the CASP ski area master planning process, undertake a hydrological study of the watershed which will integrate hydrology and channel morphology, so as to understand how the future stability of the Melvin Creek channel may be impacted by the proposed development (**Note** - This study will examine:
 - the effects of logging, roads, other paved and developed areas, snowmaking and storage on stormwater flow regimes, the natural hydrograph and long-term channel stability for Melvin Creek;
 - the effects of riparian logging on changes to the rate of large woody debris (LWD) recruitment and the long-term channel stability of Melvin Creek; and
 - changes to the rate of LWD recruitment to the channel so as to understand how future stability of the Melvin Creek channel may be impacted by the proposed development); and
- avoid the use of chloramine for disinfection of drinking water.

14. Fisheries Resources

The proponent has committed to the following (applicable commitments are to be conducting to the satisfaction of both DFO and MELP):

- manage water use associated with the development in a manner which will maintain habitat conditions, in particular the depth of water in pools in Reach 1 of Melvin Creek;
- control possible sediments which could put downstream fish values at risk;
- avoid works instream, wherever possible (**Note** - If instream work is required, it will be conducted during the appropriate instream work windows, which have least potential for fisheries impacts. Timing windows for instream works will be discussed with the appropriate agency contact(s). Work windows will relate to risks associated with downstream sediment transport to fish-bearing streams);
- provide alternative construction measures which may allow works to be carried out outside the instream work window to the satisfaction of the agency contact(s);
- undertake water quality and water quantity monitoring prior to, and in association with, development activities, to ensure that the quality of the fish habitat in Melvin

and Cayoosh Creeks and fish populations in Cayoosh Creek and lower Melvin Creek are maintained;

- conduct baseline water quality and quantity monitoring for a two-year period prior to initiating development activities;
- undertake site-specific prescriptions for areas where sedimentation and erosion may become a concern for water quality, as outlined in the EMP/ESC (**Note** - These prescriptions are to be finalized once detailed engineering designs are prepared. Site plans will consider appropriate riparian setbacks along watercourses, as well as runoff control within the development);
- follow the *Guidelines to Protect, Maintain and Enhance Fish and Wildlife Habitat on and adjacent to the Proposed Golf Course Development and Existing Course Re-Development on Lowland Areas* for the proposed golf course;
- prior to golf course construction, submit a detailed golf course management plan for approval by MELP;
- ensure that the bridge crossing of Cayoosh Creek complies with the Canadian Coast Guard's *Navigable Waters Protection Act (NWPA)* requirements;
- provide final engineered access road alignment plans for road crossings and other encroachments into the riparian area to the satisfaction of the RM-FWH (**Note** - Once these plans are finalized, habitat assessments and appropriate monitoring and/or mitigation plans will be developed which are to be incorporated into the road alignment plans (as outlined in the EMP/ESC). This will include the development of site-specific prescriptions for areas where there are potential sediment and erosion concerns for water quality, sensitive habitats and slope stability risks);
- minimize riparian vegetation removal in riparian buffers at all crossing locations;
- employ an environmental specialist during construction for monitoring of construction activities (**Note** - The environmental monitor's primary responsibilities will be to:
 - provide input to the detailed designs;
 - be present on-site during all construction activities (including clearing and grubbing);
 - during the preparation of the detailed design phase, prepare a Communication Plan which identifies contacts in the event of an environmental emergency;
 - ensure that environmental management measures, controls and specifications are properly implemented as per the terms and conditions of approvals and permits;
 - liaise regularly with regulatory government agencies as required;
 - deliver environmental education and awareness programs to construction staff prior to and during on-site works;
 - provide technical assistance, environmental information, direction and supervision on environmental matters to construction staff and government surveillance officers, as required;
 - inspect all activities during construction to ensure compliance with terms and conditions of approvals and permits, and adherence to the wildlife and vegetation protection plan;
 - document construction activities, using some or all of the following means: field notes, photographs, and video, particularly in sensitive areas;

- monitor water (including stormwater runoff), and effluent quality samples upstream and downstream of construction to assess effectiveness of mitigation strategies and compliance with all applicable requirements;
- prepare reports at regular frequencies which summarize activities and actions taken, and submit these reports to the appropriate agencies;
- ensure that contractors and/or the resort have accident contingency plans and materials in place (straw bales, siltation fencing, pumps, etc.); and
- review, comment on and monitor wildlife activities during construction (**Note** – This requires an appropriately qualified biologist);
- ensure reclamation plans are appropriate to revegetate sites to a stable condition;
- prior to construction, determine seasonal (including both winter and summer) minimum flow requirements for fish in Melvin Creek, using an appropriate scientifically defensible methodology, which is developed in consultation with MELP and DFO staff;
- develop appropriate mitigation measures to ensure maintenance of the determined seasonal minimum flow;
- install water quality/quantity monitoring station(s) two years prior to the resort's development to establish baseline data for pre- and post-development comparison; and
- if flow monitoring detects additional impacts on fisheries values, then implement mitigation (**Note** - Flow augmentation options presented include pumping of water from Cayoosh Creek into the upper section of Reach 1 of Melvin Creek, or constructing a dam on Second Lake to provide freshet storage and winter releases to maintain Melvin Creek flows).

15. Wildlife Resources - General

The proponent has committed to:

Wildlife Habitat/Vegetation

- implement a development strategy that maintains the biodiversity of the resort area, particularly in and around the rarer local habitats;
- minimize losses of plants and animals by taking a conservative approach in all works;
- for all development where site location and boundary options exist, involve the services of professional biologists in the final site selection decisions in the field, to ensure that the most favourable options for wildlife and rare plants or communities are known and considered;
- incorporate any outstanding wildlife habitat mitigation plans into the EMP/ESC;
- implement a monitored soil disturbance control program throughout construction, with all disturbed areas being replanted as quickly as possible, to minimize erosion arising from these works;
- use indigenous plants to revegetate disturbed areas, wherever possible (**Note** - Sites are to be reclaimed, as soon as possible following disturbance, to a stable condition with an appropriate species mix. All reclamation plans are to be developed and implemented to the satisfaction of the environmental monitor);

- consult a soil scientist to review existing information, conduct a field survey, and contribute to trail and road facility plans, in order to ensure that facilities are located on stable soils and well-drained areas;
- undertake appropriate planning of ski-slope locations, to minimize any destruction of natural vegetation from snow compaction (i.e. on seeps, fens and bogs);
- develop a Master Trail Plan which identifies the location, type and timing of use of all non-ski trails in the project (**Note** - The Master Trail Plan is to:
 - involve wildlife and vegetation consultants in trail layout and planning;
 - restrict access, where possible, to any areas designated as supporting rare plants or other special features;
 - adhere to riparian zone protection commitments; and
 - be prepared and provided to the satisfaction of the RM-FWH).

Alpine Belt

- alter alpine habitat as little as possible;
- avoid seeps and fens, when possible;
- minimize soil removal and disturbance;
- select sites for construction with little or no vegetation, if possible;
- select bare (unvegetated) sites for temporary structures and staging areas for soil or rock, wherever possible;
- for reclamation plans, appropriately consider studies such as those done in BC for mine reclamation in alpine environments by the BC Technical and Research Committee on Reclamation;
- to minimize erosion, undertake slope grading after spring freshet, and utilise erosion control fencing and settling ponds, where necessary;
- use helicopters for moving lift towers, to limit road access, wherever possible;
- revegetate all disturbed areas (including sites impacted by trenching for snowmaking equipment, powerlines and service road construction disturbances);
- locate mountain service roads in locations where drainage is minimally impacted;
- provide plans for roads which will be constructed to the upper lift terminals to the satisfaction of BCAL and MELP RM-FWH (**Note** - Public vehicles (including motorcycles, ATVs and snowmobiles) will be prohibited from using these roads and permanent roads are to be gated and signed. Mountain bikes will be restricted to areas and timing approved by the RM-FWH. These restrictions will be included in the BCAL master development agreement).

Sub-alpine Belt and Upper Forest

- wherever possible, retain small patches and strips of mature forest in and around developments;
- minimize the removal and/or enhance the supply of coarse woody debris (i.e. stumps, logs) in residual forest areas, at the direction of the environmental monitor, and in keeping with the advice of the Fire Marshall, in the latter case, to ensure that fuel loads are reduced to a moderate rating;
- minimize the size of soil staging areas, and ensure that soil collected during excavation is placed in an area of future development, and not in areas which would not otherwise be disturbed;
- minimize the disturbance and alteration of areas adjacent to construction sites;

- wherever possible avoid fens and seeps; and
- revegetate disturbed sites with natives species immediately after construction ceases.

Areas of High Concern

- provide full protection for the Green Valley wetlands;
- restrict unnecessary access and preserve intact polygons 1, 2 and 3; and
- restrict public use of these areas through appropriate signage and pathway design to minimize recreational impacts.

Areas of Medium Concern

- review existing plans for the Upper Village beaver pond area (polygons 4 and 5), refining them to maintain wetland/riparian values as much as practicable, and present these plans during the CASP ski area master planning process to the satisfaction of BCAL and RM-FWH;
- minimize earth movement in polygons 7 and 8 in the wetland areas, to avoid siltation and erosion;
- maintain polygons 9 and 30 in their natural states; and
- restrict unnecessary access (including skiways or trails) to polygon 10.

Areas of Low Concern

- where possible, maintain vegetation leave areas and riparian setbacks (15 to 30 meters) from development in accordance with the *Land Development Guidelines for the Protection of Aquatic Systems* and subject to ski area master plan approval by the appropriate authorities;
- undertake pre-construction surveys to avoid areas of relatively higher value; and
- reclaim disturbed soils and minimize alterations of soil and vegetation sites for skiways or run construction.

Riparian Vegetation

- minimize the amount of habitat alteration and/or encroachment during the resort's development in the Upper and Lower Villages;
- undertake a site-specific detailed evaluation of riparian areas (including wetlands) in the project area (**Note** - The assessment will identify all riparian areas which will be impacted by the project footprint, and will provide design plans to protect and mitigate riparian impacts, where possible. This riparian assessment and planning is to be prepared and provided to the satisfaction of the RM-FWH and BCAL, during the CASP process, and prior to any development occurring);
- maintain wetlands and stream setbacks (riparian buffers) to a minimum of 15 and 30 m, as provided in the *DFO Land Development Guidelines for the Protection of Aquatic Systems* (**Note** - Construction is to be restricted in these buffers, except where stream crossings, base lift terminals, and main village sites are proposed, all of which require preparation and submission of plans to the satisfaction of the RM-FWH);
- incorporate the riparian components of the Master Trail Plan as part of the CASP process (**Note** - If encroachments into the riparian zone are required for any portions of the trail, data are to be prepared and provided to the satisfaction of the RM-FWH

and BCAL which show that (i) there is no other option but to work within the riparian buffer, and (ii) that the proposed width of the trail is the minimum needed for safe public use);

- use reasonable efforts to minimize impacts to maintain, where possible, riparian values in the beaver fen during resort development;
- provide compensation to the satisfaction of the RM-FWH for all unmitigatable riparian and wetland impacts resulting from the development footprint intruding into the 15-m riparian zone, prior to creating the disturbance;
- avoid using salt, and only use very limited sand applications, on the walking trail;
- agree not to apply for Crown Land grants in the riparian corridor, unless approval is granted by the RM-FWH and BCAL;
- propose that a lake be constructed in a major portion of the easterly side of the wetland area, with a green belt park established around the lake (**Note** - The lake will provide a scenic arrival point for the Upper Village, will be designed to function as a settlement pond for the upper valley drainage systems, and will maintain remaining related riparian values. Plans are to be subject to a detailed hydrology review, and are to be prepared and provided during the CASP process, to the satisfaction of BCAL and MELP);
- preserve bogs, fens and seeps in their intact natural state, wherever possible;
- restrict access to fens and wetlands and other ecologically sensitive areas, wherever possible, to minimize habitat alteration due to trampling, littering and introduction of exotic species;
- conduct environmental sensitivity studies on the outlet areas of Second Lake and downstream riparian areas prior to any lift installation, and prior to any use of Second Lake as a supplemental water supply;
- if possible, reconstruct small wetland habitats in and around the Upper Village, or as part of the shorelines of planned ponds, subject to a detailed hydrology review;
- during construction of the dam on Melvin Creek, preserve the natural stream channel and adjacent moist habitats to the extent possible;
- prohibit the use of golfcarts, snowmobiles and ATVs on the walking trail between the Upper and Lower Villages; this is to be part of BCAL land use agreement;
- preserve the natural stream channel and adjacent moist habitats to the extent possible during dam construction on Melvin Lake;
- along Melvin Creek, where a choice exists between narrowing the road corridor and altering riparian habitat, choose the former, wherever human safety considerations permit (avalanche concerns must be recognised);
- as part of the ski area master plan (CASP), provide a detailed wetland protection plan acceptable to MELP and CWS, with particular emphasis given to polygons 1, 2 and 3, establishing ways to limit human access (including buffers) and minimizing human disturbance in all of the retained wetlands; and
- accept that a condition of the wetland protection plan will be the requirement for a proponent-funded monitoring program, which may include bioinventories by a qualified biologist, with regular reporting directly to MELP and CWS (**Note** - Monitoring results will be used to influence the implementation of mitigation measures).

Other General Wildlife Commitments

The proponent has committed to incorporate any outstanding species-specific mitigation plans into the EMP/ESC if the project is given project approval. Commitments for wildlife mitigation include the following:

Disturbance Effects

- to the extent possible, minimize visual (i.e. vehicles, dust) and noise (i.e. blasting, earth moving, heavy equipment, helicopters, chain saws and pounding) disturbances to avoid disrupting wildlife biological schedules through the use of appropriate biological timing windows of species in the vicinity of the area (**Note** - Species-specific timing and locations will be determined by an appropriately qualified biologist, and proposals are to be prepared and provided to the satisfaction of the RM-FWH);
- restrict hiking trail access above 1,975 m, or in areas known to support intense wildlife use;
- restrict public access to certain areas at specific times of the day or year to the fullest extent of the legal enforcement options available to the proponent;
- provide public education programs (i.e. brochures) on wildlife viewing etiquette;
- not permit public vehicles to use roads to the upper terminals (**Note** - Public vehicles include motorcycles, ATVs and snowmobiles);
- prohibit the public use of snowmobiles, ATVs and motorcycles in the project area;
- make reasonable efforts to discourage out-of-bounds skiers/snowboarders from reaching areas outside the Melvin Creek drainage (**Note** - This will be managed through signage mainly, and fencing, where required);
- exclude heli-skiing and heli-hiking from being components of the resort development; and
- restrict the only summer sightseeing to lift 4 (**Note** - Summer use near the upper lift 4 terminal will be limited to sightseeing and late-spring skiing on lift 9, per NGR's March 20, 2000 Visitor Profile).

Mobility Effects

- retain the integrity of animal trails, wherever possible during construction, through avoidance and ensuring that they are not obstructed by construction debris or unnecessary structures;
- restrict access to known wildlife areas during seasons of primary animal use;
- locate ski lifts in areas of least wildlife movement; and
- install under-road crossing structures (culverts or small bridges), where circumstances warrant (i.e. rare species, or concentrated records of road kill).

Access Effects

- agree to the establishment by MELP of a no-hunting area in the Melvin Creek valley;
- erect and maintain a gate across the road in the lower valley of Cayoosh Creek, to be kept locked whenever the upper valley is left unattended (particularly during construction of the road to the upper reaches of the valley);
- monitor wildlife sightings and roadkills continuously to assist in locating potential areas where additional mitigation is required;

- install a combination of speed restrictions and warning signs to minimize vehicle/wildlife collisions;
- revegetate roadside berms and ditches in a manner to allow visibility and minimize the potential for animal attractants;
- install speed bumps or rumble strips to alert drivers and ensure that speeds are reduced; and
- avoid using clover or alfalfa in any seed mixture used in reclamation of disturbed roadside sites, in order to make roadsides less attractive to wildlife.

Introduced Species

- adhere to strict policies on the presence of dogs, cats and exotic species in the proposed resort, including requiring pets to be on leashes and not to be left unattended outside;
- present a bylaw for animal control to SLRD;
- prohibit livestock from the resort area, since they may attract native carnivores; and
- if pack animals are to be used for recreational activities originating at the resort, seek approval for all plans through a formal application and review process, involving MELP.

Other

- implement appropriate mitigation measures to minimize impacts on wolverine, including controlling hunter/poacher access, ensuring good garbage management, providing appropriate education for staff, public and visitors, banning livestock, avoiding identified wolverine denning sites, developing and implementing a Problem Wildlife Plan, and controlling people access from the resort into adjacent valleys;
- continue surveillance of an active Golden Eagle nest site within 1 km of the Melvin Creek drainage annually, as a component of the wildlife monitoring program;
- minimize effects on other wildlife species, where possible;
- for species with fixed and local habitat requirements and/or those with colonial tendencies (e.g. water voles, hoary marmots, common pikas), undertake specific surveys prior to commencing individual developments to identify opportunities for mitigation (through minor relocations and adjustments);
- protect the primary area of occurrence for water voles in the Melvin Creek drainage in the wetland reserve (Water Vole Basin), in the upper valley near Melvin Lake;
- undertake a long-term, systematic monitoring program in the Melvin Creek valley (**Note** - The objectives are to document the local and general effects of the development, and to provide a basis for adaptive management in the valley (i.e. to change policies or implement modified mitigation and enhancement in response to new information or problems). The monitoring program is to be prepared and provided to the satisfaction of the RM-FWH during the ski area master planning process, and to include:
 - goat monitoring (see discussion of mountain goats – section 6.2.3.2.2);
 - biodiversity studies, based on the TVBRIM method;
 - species or group inventories, using RIC methods, as required (i.e. for red-listed and blue-listed species, pika, marmot and other species of concern);
 - establishment and maintenance of a formal reporting process for wildlife observations; and

- monitoring of species for two years prior to significant construction (clearing, lift development) at a full scale during the first five years, and then monitoring of the species once every three years for a further 15 years);
- work with an education institution to establish an 'alpine institute' where alpine research and follow-up monitoring would be carried out;
- employ a project biologist or ecology specialist to review, comment upon (provide advice) and monitor all construction work, wildlife activities and water quality issues within and adjacent to the Melvin Creek drainage during the period required for resort construction; and
- develop and implement a Problem Wildlife Plan in consultation with the RM-FWH.

16. Mountain Goats

Following the independent goat study evaluation, the proponent commits to:

- Implement a monitoring program, funded by NGR (\$500,000 funding, to be expended reasonably evenly over a 10-year period, recognizing a need to carry out more work in the initial years), and based on the following committee process:
 - terms of reference for the program will be developed by a committee made up of MELP biologists, independent wildlife consultants (technical specialists in mountain goat biology who will be retained on an as-needed basis) and NGR's biologists, plus any other persons whom the committee deems appropriate, including a recognised biometrician, with a background in environmental impact assessment and ungulate ecology, to provide statistical advice on the monitoring program on an as-needed basis;
 - any costs (i.e. travel and per diem) associated with independent members of the committee will be shared on a 50/50 basis between MELP and NGR;
 - the committee will make recommendations to MELP, and will be responsible for developing objectives and outlining study methods relating to the qualitative and/or quantitative aspects to be measured, and for providing a consistent and transparent procedure for interpreting and acting on data obtained;
 - based on the committee's recommendations, MELP will make decisions on appropriate monitoring requirements and related matters;
 - where possible, decisions will emerge from consensus reached in committee deliberations;
 - in the event of a dispute between MELP and NGR with respect to the measures to be implemented, independent expert(s) commissioned to participate in the committee's deliberations will attempt to employ their expertise to help mediate an overall consensus on issues in dispute;
 - in the event that consensus is still not reached, the independent committee members will be expected to document their own positions on issues in dispute;
 - MELP will receive the committee's advice, including the positions of independent members, and will make a decision;

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- NGR will have the further option to seek dispute resolution by appealing MELP's decision to specified senior staff in MELP and BCAL for joint consideration and decision; and
- NGR agrees to abide by MELP's decisions or, in the event of appeal by NGR, by the decisions rendered by the appeal process.

Based on decisions rendered through the above committee process, NGR commits to:

- conduct monitoring during the pre-construction, construction and operations phases of resort development, with details to be finalized through the committee process if an EA certificate is granted;
- monitor impacts on goats resulting from avalanche control activities;
- use the monitoring results to guide the finalising of lift terminal placements; and
- if the results of monitoring warrant, revisit and appropriately revise mitigation commitments and plans to address impacts on mountain goats;

With respect to mountain goat impact mitigation, NGR specifically commits to:

- institute seasonal closures for Lifts 2, 5, 8, 10, 11 and 13 by April 30, to minimize disturbances to late winter/spring goat movements to, and use of, areas used during pre-kidding, kidding and early rearing (**Note** - to be reviewed, based upon monitoring program);
- review placement (i.e. exact location) of lift 5 (which is approved in principle), pending the outcome of monitoring intended to clarify winter use of the West Ridge complex;
- delay installation of Lift 5 for 5 years if additional telemetry and monitoring demonstrate that Lift 5 appears to be located directly on a regularly-used movement corridor, or if operation of Lift 2 demonstrates interruption of an important movement corridor along the ridge system used by a significant proportion (perhaps >25%) of the local wintering goats (**Note** - During the delay, evaluate the threshold effect of Lifts 2 and 11 on movements along the West Ridge complex, and the degree of habituation to these potential disturbances near the ridgeline);
- cease operating lift 5 if significant impacts on goat movement along the corridor are identified during monitoring, and, if impacts persist and the above committee process so determines, close the lift and remove it from operation;
- remove and rehabilitate the road used to construct the communications tower, following its construction (**Note** - Access for servicing the tower during winter will be restricted to snowmobile or snowcat; and during summer, to helicopter, with helicopter use avoided when goats are known (or suspected) to be within a 2,000-m sight distance of the vicinity);
- site the upper terminal of Lift 2 at a minimum of 14 vertical m (to accommodate a 10-m vertical setback from the top of the terminal tower) and 50 lineal m from the summer goat trail on the West Ridge (**Note** - Conduct a site visit with MELP to determine a mutually agreeable location for this upper terminal of Lift 2);
- site the upper terminal of Lift 11 approximately 45 m below the West Ridge;
- site the upper terminal of Lift 8 at a minimum of 14 vertical m (to accommodate a 10-m vertical setback from the top of the terminal tower) and 50 lineal m from the top of

- the Upper Barkley Ridge (**Note** - Conduct a site visit with MELP to determine a mutually agreeable location for the upper terminal of Lift 8);
- conduct 10 years of additional telemetry and monitoring on the impacts of Lifts 2, 8, 10, 11, and 5 on goat use of the ridges and spring/summer habitat in sub-units 6, 7 and 8 (**Note** – Bearing in mind that Lift 13 is approved in principle, if significant impacts are detected or the slopes serviced by Lift 13 appear to receive extensive and regular use during winter, relocate the lift);
 - prohibit construction in sub-units 3, 6, 7 or 8 (including the Twin Lakes area) between December 1 and July 15;
 - concentrate hiking trails and lift access within the north side of the Melvin Creek basin (**Note** - Trails will not be located above 1,975 m in sub-units 3, 6, 7 and 8. Trails in these sub-units will be closed from May 1 until July 15);
 - construct any goat-viewing area for the mineral lick at a safe distance from the mineral lick;
 - prohibit recreational snowmobile and ATV activity within the Melvin Creek drainage;
 - make reasonable efforts to discourage out-of-bound skiers/snowboarders from reaching areas outside the Melvin Creek drainage (**Note** - This will be managed through signage mainly, and fencing, where required);
 - minimize the disturbance to goats from helicopters during construction, particularly during ski lift construction, through the following:
 - minimize helicopter activity beyond the bounds of the Melvin Creek watershed during construction;
 - ensure that goats are not subjected to surprise sudden noise created by helicopters, and that helicopters will stay as far from goats as safely possible;
 - ensure that helicopters are not flown within a 2,000-m distance of goats, unless they are located beyond a ridge and out of the line of site;
 - prohibit all resort-related recreational helicopter activity beyond the bounds of Melvin Creek during resort operations (excepting emergencies and occasional summer servicing of the communication tower); and
 - undertake no construction activity in sub-units 3,6,7 or 8 between December 1 and July 15 (**Note** - Any proposed construction activity within these subunits should be presented to MELP, and any variance from the timing window would need agreement by MELP prior to construction. No blasting should take place at any time within the Melvin Creek drainage when mountain goats are within 2000 m of the work site (or other specified distance to be agreed between NGR and the RM-FWH)).

17. Grizzly Bears

The proponent has committed to the following:

- comply with the terms and conditions outlined in the document entitled *A Bear Management Plan for the Proposed Melvin Creek/Cayoosh Resort: Annotated Outline*, dated June 27, 2000;

18. Birds

The proponent has committed to:

- address potential impacts on Spotted Owls through generic measures undertaken during project development, such as minimising habitat alterations and timing construction activities to avoid the breeding season;
- conduct a one-season Spotted Owl inventory prior to road construction;
- undertake a specific set of standard surveys for Spotted Owls, prior to any disturbance to the area, including logging, blasting or road construction or construction in the upper valley, during the period when adults would be on (or near) a nesting territory;
- be prepared to propose additional mitigation measures, if inventory results warrant, which would include avoidance of a confirmed nesting site;
- employ a qualified biological consultant to conduct a Harlequin Duck survey during the appropriate seasons, and prior to any disturbance, such as logging, blasting or road construction (**Note** - The presence and abundance of Harlequin Ducks in the area are to be determined);
- consult CWS regarding appropriate timing for the survey;
- employ a qualified biologist to monitor the proposed construction site prior to construction;
- if Harlequin ducks are discovered at the sites of the project's on-site and/or off-site components, develop an appropriate mitigation strategy for any potential impacts, including the adoption of setbacks from duck habitat of at least 100 m, if possible; and
- employ a qualified biologist to conduct surveillance for Harlequin ducks during resort operation to assess the failure and/or success of any implemented mitigation measures, using an adaptive management approach (**Note** - Surveillance after the initial pre-disturbance Harlequin Duck survey will be determined in consultation with CWS, and will reflect the findings of the initial survey).

19. Threatened and Endangered Vegetation Communities

The proponent has committed to:

- further check potential sites in the development area to confirm the site-specific presence/absence of threatened and endangered plants prior to construction (**Note** - Measures to minimize impacts on these plants are to be developed, and where possible, site plans are to be altered. Additional mitigation measures may include restricting access in the vicinity of sensitive areas, designing and locating trails to minimize disturbances, and transplanting potentially impacted plants to other appropriate habitats);
- prior to any site disturbance for resort development purposes, conduct a ground survey to inventory rare and endangered plants and fauna in July and August;

- conduct surveys at least twice during the flowering season, preferably in June and August; and
- wherever possible, preserve rare and endangered plants though modifications to trail and road alignments.

20. Impacts on Alpine Vegetation

Refer to section 6.2.3.2.1 - Wildlife Resources - General (Alpine Belt) for a listing of NGR's commitments regarding alpine vegetation.

21. Cumulative Environmental Effects

The proponent committed to:

- provide an outline for a cumulative effects monitoring program during the development of the ski area master plan.

22. Forest Resources

The proponent has committed to:

- continue to work with MoF and Ainsworth Lumber in the post-EA period to ensure that an appropriate logging plan can be developed that is compatible with future tourism use;
- refrain from harvesting immature timber unless absolutely necessary;
- undertake no clear-cutting, beyond that which is provided for in the conceptual resort master plan, unless plans are prepared and provided to the satisfaction of the RM-FWH;
- leave a feathered wind-firm edge inside the area shown on the conceptual plan, when logging near the edge of riparian areas and ski runs;
- ensure that the new bridge constructed to replace the temporary bridge across Cayoosh Creek is in compliance with the *Navigable Waters Protection Act*;
- in keeping with the overriding public safety requirements of BCAL and the proponent's need to build a conventional ski resort with defined, forested ski trails, minimize the loss of timber in constructing ski runs, so as to leave as much mature timber as possible, and glade ski runs;
- seek approval for logging only in areas shown on the conceptual master plan as commercial core, residential development, road, skiway or ski run above 1500 m;
- prepare and provide plans for logging of areas in addition to those shown on the conceptual master plan to the satisfaction of the RM-FWH;
- for clearing required for project development, prepare and provide to the satisfaction of the RM-FWH plans for any clearing of areas greater than 0.25 ha in addition to that provided for in the conceptual master plan. (**Note** - Smaller areas could be cleared with the approval of the environmental monitor, if no alternative exists;

- undertake no logging within the riparian buffer, per the *Urban Land Development Guidelines*, until the ski area master plan has been accepted under the CASP process; and,
- adhere to mitigation measures required to protect wildlife (i.e. timing windows, protection of special habitat features identified during Harlequin Duck or Spotted Owl inventories, etc.).

23. Mineral Resources

The proponent has committed to:

- apply to BCAL to arrange for renewal of the temporary 'No Staking Reserve' currently placed over the Melvin Creek drainage on a permanent basis;
- raise no objections to renewed operations at the existing granite quarry of Northwest Granite Co. Ltd;
- raise no objection to future mineral exploration and mining activities in the lower Melvin Creek valley; and
- in general, recognise that the area outside the 'No Staking Reserve' is open to other resource development, subject to decisions made, and conditions imposed, by government through the appropriate review processes which will take into account existing uses and prior rights, and which will recognise that access to other resource development would not pass through the 'No-Staking Reserve'.

24. Recreation and Tourism Effects

The proponent has committed to:

- ensure that no access trails are built by the resort operators to provide access from the Melvin Creek valley into the Barkley Creek valley or the Lost Creek valley areas.
- ensure that no access trails are built by the resort operators to provide access from the Melvin Creek valley into the Downton Creek valley;
- review every upper terminal access road with BCAL and RM-FWH to agree on methods to minimize public access;
- prohibit public vehicle use of non-public roads (upper terminal access roads and communication tower service roads); and
- gate permanent upper terminal access roads.

25. Commercial and Non-Commercial Fish and Wildlife Recreation

The proponent has committed to:

- put forth best reasonable efforts to negotiate a mutually acceptable compensation arrangement for the guide/outfitter.

26. Employment Effects

The proponent has committed to:

- make reasonable efforts to maximize employment and economic development opportunities for local residents in the Lillooet and Pemberton areas (**Note** – NGR will approach this by working with federal, provincial and local government staff and relevant community organisations involved in education, skills training and economic development to ensure that residents are well informed of potential employment opportunities, development schedules and contracts, as well as any other economic development opportunities which could benefit local residents and neighbouring communities);
- meet with interested St'at'imc communities to develop strategies and relationships to maximize employment opportunities;
- establish hiring practices and procedures to address St'at'imc issues;
- employ a qualified St'at'imc personnel person in a key role within the resort's Manpower Department;
- review and develop a strategy to have third-party developers and investors clearly understand and co-operate in the economic and employment participation of First Nations people in the resort project;
- outline First Nations employment strategies with all private sector investor/developer groups, and inform them of the availability of St'at'imc personnel seeking employment, and of NGR's commitment to involve interested St'at'imc employees and investors;
- develop youth recreation programs to introduce youth from all interested St'at'imc communities to tourism in general, and the resort project in particular; and
- provide job training opportunities within the resort linked to all training programs.

27. Accommodation Effects

The proponent has committed to:

- assist Lillooet, Pemberton and First Nations communities in establishing growth models during the post-EA and post-master-development-agreement stages;
- if all of the surrounding communities decide to limit growth below the housing requirements for the employees of the proposed resort, increase the percentage of on-site employee housing;
- work with St'at'imc communities and the province to develop an employee housing program which provides both suitable short-term/weekly housing and family-oriented affordable housing on-site for First Nations members; and
- work with St'at'imc communities and the province to develop a St'at'imc Housing Trust Fund which assists First Nations to address chronic housing shortages in a long-term manner that both enhances St'at'imc communities and ensures maximum First Nations employment in businesses associated with the resort.

28. Service Delivery Effects

The proponent has committed to:

- discuss day-care financing issues with other government agencies and with First Nations communities.

29. Community Stability Effects

The proponent has committed to:

- initiate and maintain a working relationship with the local Human Resource Centre and the BC Benefits Employment and Benefits Centre administration in order to minimize the negative effects of the project and maximize its positive effects on the stability of local communities; and
- participate in any reviews to update St'at'imc community development plans, if invited by St'at'imc Bands.

30. Health Effects

The proponent has committed to

- establish a first aid facility at the resort;
- within two years, encourage the opening of a medical clinic; and
- base an industrial ambulance at the resort for transporting workers, per WCB requirements.

31. First Nations Traditional Use Issues

In addition to the commitments outlined in s. 6.6.2 - Archaeological Resources, the proponent has committed to:

- limit the communication of information to site personnel and the public on the whereabouts of any located historical sites; and
- restrict the use of signage.

To mitigate potential impacts on First Nations traditional use of the Melvin Creek area, the proponent has also committed to:

- work with St'at'imc and MELP to determine whether a controlled deer hunt of limited (2-3 week) duration for St'at'imc members would be possible in the upper Melvin Creek valley;
- ensure that St'at'imc people continue to have access to the Melvin Creek valley for traditional gathering activities, and to maintain areas of ethnobiological significance for these purposes;

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- support a 'no firearms' policy within Melvin Creek, except for possible controlled St'at'imc hunting;
- discourage access to other adjacent valleys by resort visitors and guests; and
- not develop any trail system which links adjacent valleys.

Beyond that, NGR's primary ability to mitigate any effects on First Nations traditional use, rights and title is connected with ensuring that economic benefits of project development are shared with St'at'imc communities as follows:

- make reasonable efforts to include, as terms of any purchase agreement with third parties, the best possible contractual obligation to have third parties employ First Nations members where possible;
- if the resort proceeds, pay land use fees to St'at'imc;
- support allocation of some land use fees paid by NGR to St'at'imc to partially fund a housing trust or fund or other such funds as the St'at'imc deem necessary;
- meet infrastructure commitments for wastewater disposal and domestic water supply per those outlined by First Nations and per MELP's requirements;
- make reasonable efforts to reach benefit agreements with the St'at'imc, and to work especially close with Bands which are most directly impacted (i.e. Mount Currie, Cayoosh Creek, Lillooet and N'Quat'qua);
- explore and negotiate with relevant and willing First Nations consultation protocols which will provide for the establishment of an environmental management mechanism and for continuous development communication with interested First Nations communities;
- continue to work in good faith with First Nations to identify and respond to issues identified in the EA process;
- negotiate an economic benefits agreement which would include provisions for construction and operations-stage employment, student employment and co-ops, business opportunity notification, and make best efforts to include these same provisions in third-party agreements;
- entertain equity partnerships and joint ventures as identified by the First Nations;
- make reasonable efforts for direct purchase from First Nations and neighbouring communities and their businesses;
- provide First Nations with assistance in strategic planning for non-project marketing activities;
- participate with any on-going marketing or community liaison committees; and
- provide First Nations with development sites (at cost) for businesses owned and operated by First Nations.

For purposes of monitoring and ensuring implementation of these commitments, NGR will commit to undertake the following:

- report progress annually to the Minister of Environment, Lands and Parks and the Minister of Aboriginal Affairs;
- report with respect to any agreements around First Nations employment and commercial opportunity participation to the Minister of Aboriginal Affairs and each Band;

- issue reports to the EAO annually until at least Phase Two project construction is completed, or longer if deemed necessary by EAO and First Nations participants; and
- agree that, if the project is granted an EA certificate, the certificate would be amended in the future to include any subsequent agreements with First Nations members.

32. Archaeological Resources

The proponent has committed to:

- undertake no summer grooming terrain alterations at site EdRn 1;
- not inform staff, members of the public or resort guests of site EdRn 1, and offer no lectures, cultural tours or signage to identify this site;
- construct no summer trails nor use any existing trails that pass within 50 m of archaeological site EdRn 1, and not to carry out any form of grooming which would result in altering the ground surface (**Note** - No motorcycles, ATVs or bicycles will be permitted on or within the site area);
- make the key project management team aware of the construction prohibition and restricted activity levels for site EdRn 1;
- if archaeological material is inadvertently encountered during project construction, immediately suspend all land-altering activities in the vicinity of the project site, and contact the Archaeology Branch, MSBTC (**Note** - The need for remedial archaeological work will require a *Heritage Conservation Act (HCA)*, section 14 permit. A section 12 permit will otherwise be required to authorize alterations to the site);
- work with St'at'imc archaeologists (if St'at'imc is willing to do so) to clarify the origin and use (whether Aboriginal or non-Aboriginal) of specific sites, facilities and features where origin and use are deemed uncertain;
- work with St'at'imc staff (if St'at'imc is willing to do so) to document those archaeological features present within the Melvin Creek drainage which are not subject to the provisions of the *HCA*; and
- work with the St'at'imc archaeologists (if St'at'imc is willing to do so) to re-examine Melvin Creek valley bottom areas to determine any presence of culturally modified trees and, if possible, to mitigate any potential conflicts with resort development.



**ORGANISATIONS ON
EAO's MAILING LIST**

APPENDIX C

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**LISTING OF ORGANISATIONS, INCLUDING BUSINESSES AND PUBLIC INTEREST GROUPS, IN THE ENVIRONMENTAL ASSESSMENT OFFICE'S MAILING LIST FOR THE REVIEW OF THE MELVIN CREEK/CAYOOSH PROJECT
(as of June 23, 2000)**

Note – The list includes organisations added to the list both before and since the project report was filed (i.e. since the last EAO mail-out in August 1999, which was the open letter announcing commencement of the project report review). Organisations were added to the list since that mail-out if they have written to the province about the resort proposal since that time, and a copy of their letter was received by the EAO. EAO has not used the list to mail out information since that time.

Afton Operating Corporation
Ainsworth Lumber Company Ltd
Alm Vacations
Alpine Club of Canada
Ashcroft & District Hospital
Association of Professional Engineers & Geoscientists of BC
Association of Whistler Area Residents for the Environment (AWARE)

BC Cattlemen's Association
BC Chamber Of Commerce
BC Conservation Foundation
BC Environmental Information Institute
BC Environmental Network
BC Federation Of Labour
BC Fishing Resorts & Outfitters Association
BC Golf Superintendents Association
BC Hydro & Power Authority
BC Provincial Council of Carpenters
BC Public Interest Advocacy Centre
BC Spaces for Nature
BC Trappers Association
Bear Watch
Brent Harley and Associates Inc.
Bridge River Exploration
Bridge River-Lillooet News
British Columbia Mountaineering Club
Business Council Of BC

Canadian Union of Public Employees (CUPE)
Cahilty Lodge
Calibre Strategic Services
Canada West Ski Areas Association

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Canadian Coast Guard
Canadian Parks & Wilderness Society
Canwest Construction Company
Cariboo University College
Cayoosh Recreation Club
Communication, Energy and Paperworks Union of Canada (CEP) Local 76
Chris Stethem and Associates Ltd.
CKMO 103.1 FM
Communications, Energy & Paperworkers
Consultants Association Of BC
Council Of Forest Industries
Council Of Tourism Associations
Cypress Bowe Recreations

D'Arcy Springs Hatchery Ltd.
David Suzuki Foundation
Dennis R Bontron Incorporated
Diversified Ova-Tech Ltd.
DR Matthews and Associates Inc.
Ducks Unlimited Canada

E.B. Tobe Enterprises Environmental Cons
EBA Engineering Consultants Ltd
Economic Development Association of BC
Ecosign Mountain Resort Planners Ltd
ENKON Environmental
Environment Consulting Engineers of BC
Environmental Advisory Committee
Environmental Industry Committee
Environmental Youth Alliance

Faxtrans
Federation Of BC Naturalists
Federation of Mountain Clubs of BC
Fountain Ridge Ginseng Farms Ltd
Fraser & Beatty Barristers and Solicitor
Fraser Canyon Strategy Committee
Fraser River Action Coalition
Friends of the Rainshadow
Friends Of The Stikine

Geological and Aquaculture Consultant
Global Engineering & Testing Ltd
Goepel McDermid Securities
Greater Kamloops Chamber Of Commerce
Guide Outfitters Association of BC

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Halfway Ranch
HEMMERA Resource Consultants Ltd.
Hermon Bunbury & Oke
Hillyer Atkins Barristers & Solicitors
Hope & District Chamber of Commerce
Howe Now Designs

International Union of Operating Engineers
IRIS Environmental Systems

Jack Johnson Company
Jay Gee Motel

Kamloops & District Fish & Game Club
Kamloops Chamber of Commerce
Kamloops Naturalist Club
Keefe Construction
Kerr Wood Leidal Associates Ltd

Land Use & Natural Resources Management
Landscape Consulting Corporation
LGL Limited
Lidstone Young Anderson
Lillooet Professional Speech, Language & Learning Services
Lynnpeaks Consulting Ltd
Lytton & District Chamber of Commerce

Mackenzie Canadian Alpine Ski Team
McCrory Wildlife Services Ltd
Mile 0 Motel
Mitlenatch Field Naturalists Society

Nicola Valley Institute Of Technology
Northwest Community College
Northwest Wildlife Preservation Society

Open Learning Agency
Outdoor Recreation Council of BC

Pacific Fishing
Pacific Metals Ltd
Pavilion General Store
Pemberton Sportsmen's Wildlife Association
Planning Institute Of BC
Pulp Paper and Woodworkers of Canada (PPWC) - Local 10

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Premiere Verbatim Reporting Ltd
Producers Association
Professional Employees Association

RC Harris & Associates
Real Estate Council Of BC
Renewable Resources Consulting Services
Resort Vacations International

Sabre Group
Saskatchewan Environment & Resource Management
Save Our Parkland Association
Seacor Environmental Engineering Inc.
Sierra Club
Sierra Club Of British Columbia
Sierra Club Of Western Canada
Sierra Legal Defence Fund
Simon Fraser University
Sno Engineering Inc.
Society Promoting Environmental Conservation (SPEC)
Steelhead Society Of BC
Steelworkers Union
Sun Peaks Resort At Tod Mountain
Swinton & Company

T. Buck Suzuki Environmental Foundation
Telkwa Education Action Coalition of Householders
Thompson Institute
Thompson-Okanagan Interagency Managment
Timberland Consultants Ltd.
TLC Office Services
Tolko Industries Ltd
Triple K Taxis and Charters

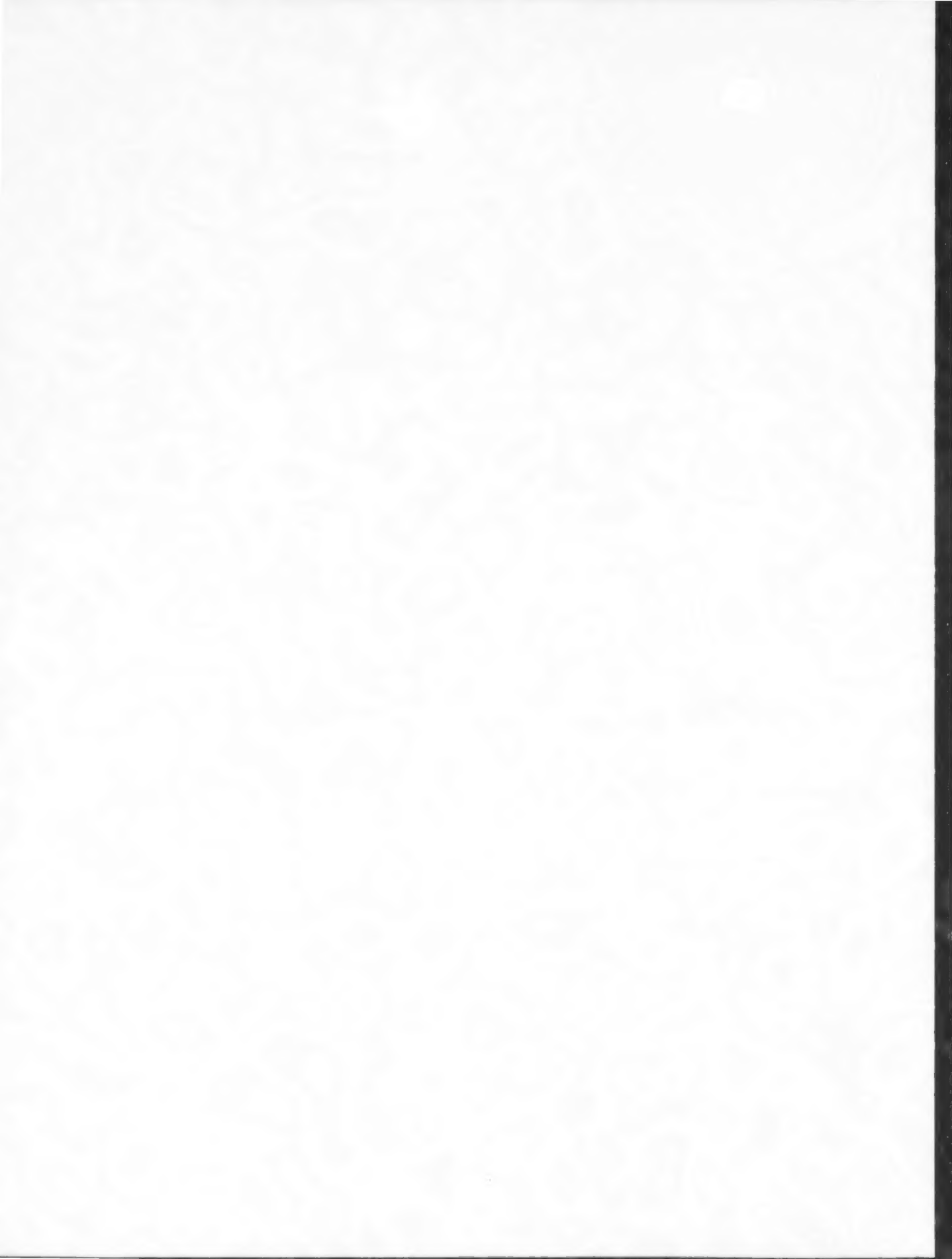
Union Of BC Municipalities
University College Of The Cariboo
University Of British Columbia
University of Northern BC
Urban Systems

Valhalla Wilderness Society
Vancouver Board Of Trade
Varsity Outdoor Club

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West Coast Environmental Law Association
Western Canada Wilderness Committee
Weyerhaeuser Canada Ltd.
Whistler Snowmobile Guided Tours

Yalakom Ecological Society



**NGR's BEAR MANAGEMENT PLAN:
ANNOTATED OUTLINE**

APPENDIX D



APPENDIX D

A BEAR MANAGEMENT PLAN FOR THE PROPOSED MELVIN CREEK/CAYOOSH RESORT: ANNOTATED OUTLINE (Finalized June 29, 2000)

The following constitutes an outline for a Bear Management Plan which will be prepared by the proponent, NGR Resort Consultants Inc., for approval by MELP, if the Melvin Creek/Cayoosh mountain resort project is certified under the EA process. The implementation of the Bear Management Plan will be overseen by a committee representing MELP biologists, independent wildlife biologists (technical specialists in grizzly bear biology who will be retained on an as-needed basis) and the proponent's biologists, plus any other persons whom the committee deems appropriate. Any costs (i.e. travel and per diem) associated with independent members of the committee will be shared on a 50/50 basis between MELP and the proponent. The committee will make recommendations to MELP on monitoring, measures to respond to issues identified through monitoring, the responsibility of the proponent vs. other parties for funding the implementation of any recommendations (in addition to any compensation), and appropriate compensation for the residual impacts of the project on grizzly bears and grizzly bear habitat within the Melvin Creek drainage. Where the decision is that the proponent should provide compensation as part of a strategy to manage a particular adverse effect on grizzly bears, the proponent may choose to provide compensation in cash or, if appropriate, in kind (e.g. if on-site equipment or workers are available to assist in the implementation of a particular measure). For further details on the committee's functioning, see section 4, below.

1.0 Introduction

1.1 Bear Country: Identify project area as good bear habitat, supporting both species. Provide brief life history descriptions for the two species, identify the seasonal locations within Melvin Creek drainage at which bear occurrence is most likely (with applicable map(s), but emphasizing the potential for occurrence anywhere in the area at any time between about 1 May and 30 October (the "bear season"). In conjunction with this section, an appendix describing species recognition factors (observations and sign) would be provided.

1.2 History and Status in the Area: Past sightings, harvest records, and provincial management regimes, with particular emphasis on the Stein-Nahatlatch Grizzly Bear Population Unit's "Threatened" status.

1.3 Problem Description: Description of bear problems in general (implications for human safety and bear mortality, with examples from the literature:

- Introduce the concepts of food conditioning and habituation, as well as aversive conditioning and hazing.
- Emphasize the importance of adult females.

1.4 Resort Management Objectives: In general to prevent bear problems, and in particular to minimize disturbance factors and mortality risk for grizzly bears in and around Melvin Creek in the context of the population's Threatened status.

2.0 Preventing or Minimizing Bear Problems: Action Plan

2.1 Reporting System: This would emphasize the need for continuing information gathering, describe the mechanics of reporting/recording data, and provide data forms/cards. It would be directed to both staff and visitors, and the purpose would be to provide notice ASAP on local bear occurrence, and to provide data on seasonal locations to help in the adaptive management aspect of future operations and grizzly bear population recovery. It would be applicable to both the Melvin Creek drainage and to the general local area (Stein-Nahatlatch GBPU boundaries).

2.2 Construction Considerations:

- Restrict helicopter activity in the Cayoosh Range to a minimum during construction, and particularly beyond the bounds of the Melvin Creek watershed.
- Avoid certain habitats for facilities and trails.
- Ensure reporting of observations by construction crews.

2.3 Infrastructure Considerations: Provide for bear-proof garbage containment, and avoid developing features attractive to bears in and near primary resort facilities.

2.4 Education Considerations: Brochures, posters, lectures and staff training sessions (relating to observations and activities both inside and outside of Melvin Creek drainage):

- Need/desirability/methods for reporting observations
- Human behavior aspects (don't feed wildlife; don't leave garbage out; guidelines for outdoor barbecuing, picnics, etc.; no composting, fruit trees).
- Hiking trails and rules.
- Bear encounter guidelines.
- Areas and activities to avoid outside of the Melvin Creek drainage.

2.5 Garbage Management: Details of all provisions inside the Melvin Creek drainage (Fenced kitchen facilities and bear-proof containment at commercial establishments, rules/recommendations for private dwellings and in local outdoor areas, all to be a part of resort design and architectural guidelines), and appropriate behavior in bear country outside the drainage. At a minimum, the objective would be to meet all criteria of MELP's "Bear Smart" Community program.

2.6 Outdoor Activities (Hiking, golfing): This involves managing and monitoring all outdoor facilities and opportunities in the resort area.

- Managing the Nature and Location of Activities. The location of all recreational trails (hiking, mountain biking, equestrian, other) is subject to approval by MELP and, by prior agreement, none are to be constructed above 1975 m in Sub-Units 3, 6, 7, and 8. Trails will not be built that provide access to neighbouring drainages. In addition signs would be placed at strategic locations in relation to those areas and reference to them would be part of the education component (last bullet, above). Signage on lifts will be used to explain why the lifts cannot be used to access other valleys. Other measures committed to in relation to mountain goat mitigation (e.g., only Lift 4 operational for summer sightseeing, deactivation of road to communications tower) are also applicable. The recreational use of motorized vehicles will be prohibited.
- Monitoring and Regulating Recreational Activities. This involves monitoring the degree to which people using the resort are accessing surrounding drainages, and establishing restrictions designed to minimize that (e.g., disallowance of overnight parking for non-guests/non-resident staff, transport on lifts of backpacks suitable for overnight trips, camping and making reasonable efforts to discourage all public access on the Upper Twin Lake bowl, South Ridge, Upper Barkley ridge and Elliot ridge).
- Regular Monitoring for Bear Occurrence. Within the bear season, assign staff member(s) to regular reconnaissance of the golf course and designated hiking areas to detect bear presence (direct observations, sign), and to conduct regular surveys for bear occurrence in remote portions of the drainage (vantage point surveys for direct observations, remote camera and/or DNA stations, scat samples for DNA if technology allows).

3.0 Dealing with Bears in the Melvin Creek Drainage

3.1 Decision Flow Chart: This would be based on characteristics (species, sex, age, presence of family groups), activity, and location of detected bear(s). For example, for a grizzly bear family group in the Green Valley headwaters area, avoid that area with all activities until after bears have left. For bears in the immediate resort area, other measures may apply. Notification and consultation with MELP will be required unless the situation fits a "standard" scenario in which action has been pre-determined in consultation with MELP. MELP will make the decisions on direct actions such as aversive conditioning, translocation and destruction (the latter excepting cases where there is an immediate threat to life of property) although by agreement some of these may be carried out by the proponent. Any extraordinary costs associated with responding to bear/human conflicts (i.e. use of helicopters to translocate bears) will be the responsibility of the proponent.

3.2 Aversive Conditioning: Depending on results elsewhere, this may be an option for some situations and it should be explored and, if appropriate, prepared for. Such preparation would involve identifying and assigning a qualified person on

staff (or on call), establishing approved methods, assembling required equipment/materials, and securing MELP approval and permits, as required.

3.3 Capture/Translocation: Bear Capture equipment should be maintained on site. Given that it is recommended under item 3.1, above, capture would proceed and disposal would be undertaken according to agreed upon criteria (e.g., translocation of some grizzly bears to remote sections of the GBPU or a Threatened unit elsewhere, e.g. North Cascades, may be appropriate).

3.4 Destruction of Bears: Circumstances, methods, all in consultation with and by permit from MELP

4.0 Monitoring, Adaptive Management, and Compensation:

Monitoring involves regular data gathering on bear occurrence, bear-human conflicts, human recreational uses in the area, and other factors of interest to bear security that may be identified. Adaptive management requires that identified problems are addressed, particularly when actual or potential conflicts persist in particular areas and/or times, including the issue of people moving from the resort directly out of the valley into adjacent drainages. All of the activities identified in Sections 1-3 above, designed to minimize impacts on bears, constitute mitigation. In addition, it is recognized that there will be some residual impact on habitat effectiveness and at least a slightly increased mortality risk to bears from the presence of the resort that cannot be completely mitigated. Accordingly, that will need to be compensated by habitat enhancement or restrictions of human activities outside of the drainage.

The committee overseeing the implementation of the Bear Management Plan will make a recommendation to MELP on the appropriate level of compensation as well as on how these funds could best be used. MELP will ultimately determine appropriate compensation measures which the proponent must implement, and where possible, it is expected that decisions will emerge from consensus reached in committee deliberations. Independent experts will be called upon to provide specific technical expertise as determined by the committee and to employ their expertise to help mediate an overall consensus on issues where there is a dispute between MELP and NGR. The independent committee members will be expected to document their own positions on all issues, including those in dispute. MELP will receive the committee's advice, including the positions of independent members, and will make a decision. The proponent will have the further option to seek dispute resolution by appealing MELP's decision to specified senior staff in MELP and BCAL for joint consideration and decision. - The proponent agrees to abide by MELP's decisions or, in the event of a proponent's appeal, by the decisions rendered by the appeal process. Where decisions necessitate management actions being considered and implemented by government agencies, rather than by the proponent, then pursuant to the Memorandum of Understanding (MoU) between MELP, BCAL and MoF, MELP will refer the matter to appropriate staff within these agencies for follow-up.

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4.1 On Site (Melvin Creek):

- Monitoring and Adaptive Management: Based on local reports and staff survey results, together with increased general knowledge, modify activity locations and schedules, as appropriate. This would be done both on an ad hoc basis when bears are observed, and in regular (annual) reviews of information. In the latter context, a Bear Management Plan report will be prepared and submitted to MELP annually.
- Mitigation/Compensation: Monitoring road uses outside the drainage (see below), and assisting with habitat enhancement or access restrictions outside the drainage, as appropriate.

4.2 Off Site (Highway #99):

- Monitoring and Adaptive Management: Assessing levels of use of Highway 99 and backcountry access roads from Highway 99 between Mount Currie village and Lillooet before, during, and after resort construction, to determine changes in use generally and the proportion attributable to the resort. All roads accessed from Highway 99 in this area will be monitored to some degree (unless otherwise agreed by MELP), however, monitoring effort will be prioritized based on conservation concern. Adaptive management would include recommendations for access controls, and monitoring would include assessment of access control effectiveness.
- Mitigation/Compensation: Support habitat enhancements or access controls in areas outside the Melvin Creek drainage, where monitoring shows that the project is resulting in increased use levels that are believed to be detrimental to grizzly bears.



**GRIZZLY BEAR
MEMORANDUM OF UNDERSTANDING**

APPENDIX E

APPENDIX E

MEMORANDUM OF UNDERSTANDING ('MoU') RESPECTING THE MANAGEMENT OF IMPACTS ON GRIZZLY BEARS AND GRIZZLY BEAR HABITAT ASSOCIATED WITH THE PROPOSED MELVIN CREEK/CAYOOSH MOUNTAIN RESORT PROJECT

1.0 Between:

1. This MoU is agreed between the following agencies:

- the Ministry of Environment, Lands and Parks ('MELP');
- the Ministry of Forests ('MoF'); and
- the BC Assets and Land Corporation ('BCAL'),

collectively referred to herein as 'the Parties'.

2.0 Purpose:

1. The purpose of this MoU is to establish a framework for the effective management, by the Parties, of certain potential adverse effects of the proposed Melvin Creek/Cayoosh mountain resort project (the 'Project') on grizzly bears and grizzly bear habitat.
2. The adverse effects in question are those residual effects, if any, which cannot be effectively managed solely by means of measures implemented by NGR Resort Consultants Inc. (the 'Proponent') during resort construction and operation.
3. This MoU identifies and formalises the respective roles of the signatory agencies.

3.0 Context:

1. The Parties agree that the context for this MoU is as follows:
 - An environmental assessment ('EA') of the Project is being conducted under the *Environmental Assessment Act*.
 - The EA review has identified the potential for impacts on grizzly bears and grizzly bear habitat.
 - The Proponent is proposing a range of impact mitigation measures as part of a comprehensive Bear Management Plan ('Plan'), but these measures, by themselves, may not reduce to acceptable levels the net effects of the Project on grizzly bears and grizzly bear habitat.

- Even taking account of the Proponent's Plan, residual adverse effects ('Residual Effects') are possible with respect to increased recreational use of surrounding backcountry areas, notably in connection with:
 - the issuance by BCAL of Commercial Recreation tenures under the *Land Act* in surrounding areas; and
 - increased unsupervised public recreational use of roads off Highway #99.
- An agreement between the Parties to effectively manage the Residual Effects will complement the Proponent's Plan, and will ensure that development of the Project does not result in adverse net effects on grizzly bears and grizzly bear habitat.

4.0 Applicability of MoU:

1. The roads and area over which the potential Residual Effects are to be managed under the terms of this MoU (collectively the 'Area of Applicability') are as follows:
 - with respect to road use concerns, all roads which link to Highway #99 between Mount Currie village and Lillooet, and which are either 'Existing Roads', being defined as:
 - roads which exist or are substantially under construction on the date that this MoU comes into effect; or
 - roads which, prior to the date that this MoU comes into effect, have been approved by MoF under a Forest Development Plan ('FDP'), pursuant to the *Forest Practices Code of British Columbia Act*, and which are constructed or substantially under construction before the next public review of the FDP; or
 - roads which, prior to the date that this MoU comes into effect, have been approved by MoF for construction under a Special Use Permit, pursuant to the *Forest Practices Code of British Columbia Act*, but which are not yet constructed or substantially under construction on that date;
 - or 'Proposed Roads', being defined as:
 - roads which, after the date that this MoU comes into effect, are proposed under a FDP, pursuant to the *Forest Practices Code of British Columbia Act*, or
 - roads which, prior to the date that this MoU comes into effect, have been approved by MoF under a Forest Development Plan (FDP), pursuant to the *Forest Practices Code of British Columbia Act*, and which have not been constructed or are not substantially under construction before the next public review of the FDP; or

- roads which, after the date that this MoU comes into effect, are approved by MoF under a Special Use Permit, pursuant to the *Forest Practices Code of British Columbia Act*,

and

- with respect to Commercial Recreation tenures, the area shown on the map attached to this MoU as Schedule A.
2. Notwithstanding any other term of this MoU, this MoU does not apply to public highways, and including, to public highways created by virtue of the operation of section 4 of the Highway Act.
 3. Nothing contained in this MoU derogates from or fetters the discretion of the applicable authorities or statutory decision makers, or the Province of British Columbia, or any of them, under the law, but the signatories to this MoU, or their delegates, will ensure that statutory decision makers are aware of the provisions of this MoU.
 4. Nothing contained in this MoU is intended to restrict the use of roads by a person holding a valid and subsisting free miner certificate issued under the *Mineral Tenure Act*, when engaged in lawful mineral prospecting activities.

5.0 Proposed Commercial Recreation Activities:

1. If and when BCAL receives an application for the issuance of a Commercial Recreation tenure over Crown land, where part or all of the Crown land base falls within the Area of Applicability:
 - BCAL will refer the application to MELP for review and comment.
 - Where it is determined, in consultation with MELP, to be necessary, BCAL will require the applicant to conduct any necessary environmental studies, including assessment of the cumulative effects of the proposed Commercial Recreation activity on grizzly bear values, and location, scale of development, access, user numbers and infrastructure requirements will be considerations in the assessment.
 - BCAL will not issue a Commercial Recreation tenure that is not jointly supported by MELP and BCAL.
2. For the purposes of implementing this MoU, the primary considerations in determining whether or not to issue a Commercial Recreation tenure will be:
 - the results of the tenure applicant's assessment of the potential environmental impacts on grizzly bears and grizzly bear habitat;
 - other relevant available information; and
 - the ability to offset adverse effects through mitigation or compensation.

3. Where it is determined that, through the use of management provisions which are agreeable to MELP, potential impacts on grizzly bears and grizzly bear habitat can be mitigated to acceptable levels, BCAL will ensure that such provisions are:
 - included in any Commercial Recreation tenure agreements which are concluded; and
 - fully monitored and enforced.
4. Where it is determined that, even taking into account available mitigation options, potential impacts on grizzly bears and grizzly bear habitat cannot be managed, by mitigation or compensation measures, to reduce them to acceptable levels, MELP will not support the issuance of a Commercial Recreation tenure

6.0 Public Use of Existing Roads and Proposed Roads:

1. The Parties understand the following:
 - If a project approval certificate is granted to the Proponent for the development of the Project under the *Environmental Assessment Act*, the Melvin Creek/Cayoosh project committee will recommend to ministers that one of the conditions of the project approval certificate be that the Proponent must monitor the unsupervised public recreational use (including use by resort construction and operations employees, resort visitors and resort residents) and other use of roads which link to Highway #99 between Mount Currie village and Lillooet.
 - The monitoring will be undertaken by the Proponent before construction of the Project begins, during initial construction of the Project (i.e. prior to commercial-scale resort operations), and during commercial-scale operations.
 - In general, the purpose of the Proponent's monitoring will be to establish the baseline level of use of roads during the period when grizzly bears are active, and after construction of the Project has commenced, to establish what proportion of observed use of these roads is attributable to resort construction and operations employees, resort visitors and resort residents.

6.1 Public Use of Existing Roads:

1. Where, either before or after access control measures are implemented, monitoring demonstrates to MELP that levels of public recreational use of an Existing Road are having a detrimental effect on grizzly bears and grizzly bear habitat, MELP and MoF will co-operate to identify and implement appropriate and effective access management measures, which could include, but are not limited to, any or all of the following:
 - installing signage which discourages road use;

- road deactivation;
- establishing physical blockages to control or prevent road use; and/or
- imposing legal restrictions on road use (under either the *Wildlife Act* or the *Forest Practices Code of British Columbia Act*).

6.2 Public Use of Proposed Roads:

1. MoF will refer an application for a Proposed Road to MELP for review and comment and/or consider relevant comments previously submitted by MELP.
2. If either:
 - through review of an application for a Proposed Road, or
 - through review of data on the monitoring of public use levels of a Proposed Road after it is constructed,

MELP determines that potential or actual levels of public recreational use of the Proposed Road could have, or are having, a detrimental effect on grizzly bears and grizzly bear habitat, MELP and MoF will co-operate to identify and implement appropriate and effective access management measures, which could include, but are not limited to, any or all of the following:

- installing signage which discourages road use;
 - road deactivation;
 - establishing physical blockages to control or prevent road use; and/or
 - imposing legal restrictions on road use (under either the *Wildlife Act* or the *Forest Practices Code of British Columbia Act*).
3. MELP will not support uncontrolled public use of Proposed Roads in cases where this has the potential to result in adverse effects on grizzly bears and grizzly bear habitat.

7.0 Term, Amendment and Cancellation

1. This MoU shall be in effect on the date on which it is signed by the signatory agencies.
2. This MoU is terminated if the Proponent is not granted a project approval certificate to proceed with the Project under the Environmental Assessment Act.
3. This MoU may be amended by mutual consent.
4. This MoU is an interim agreement, and its application will be considered terminated in any part of the Area of Applicability where a more permanent land use plan, either project-specific or of general application, which provides for measures that will ensure that the Project does not result in adverse net effects on grizzly bears and grizzly bear habitat in the Area of Applicability,

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comes into effect, whether by means of legislative enactment or a policy declaration of the Government of British Columbia.

8.0 Implementation of the MoU:

- | | |
|--|--|
| 1. The staff contact(s) for MELP will be | Regional Director/Kamloops
Regional Director/Lower Mainland |
| 2. The staff contacts for BCAL will be | Regional Manager/Kamloops
Regional Manager/ Surrey |
| 3. The staff contacts for MoF will be | District Manager/Lillooet
[District Manager/ Squamish] |

Original signed by Don Fast for _____
Deputy Minister, Ministry of Environment,
Lands and Parks

Dated June 29, 2000

Original signed by Cassie Doyle _____
President and Chief Executive Officer
BC Assets and Land Corporation

Dated June 29, 2000

Original signed by Larry Pedersen for _____
Deputy Minister
Ministry of Forests

Dated June 28, 2000